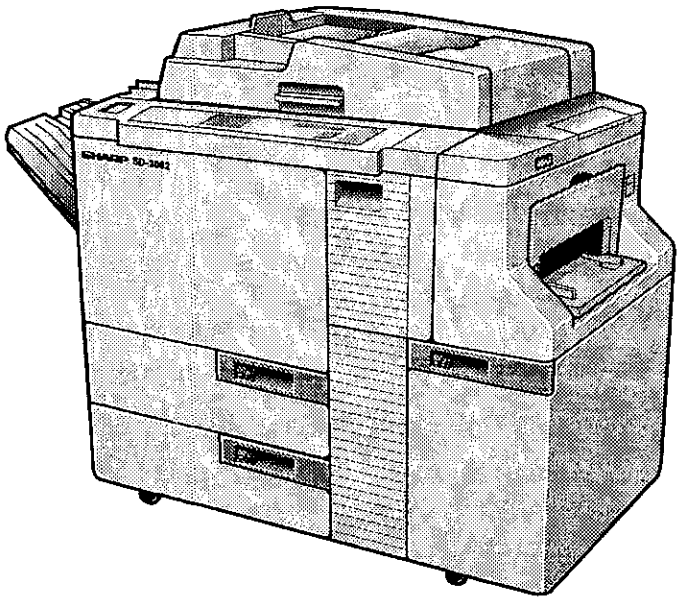
# SHARP SERVICE MANUAL

CODE:00ZSD3062FM/E



# NO.1

# MODEL SD-3062

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Parts marked with "⚠" are important for maintaining the safety of this unit. Be sure to replace these parts with only the specified ones for maintaining the safety and performance of this unit.

SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

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# [1] PRODUCT OUTLINE

## 1. SD-3062

The SD-3062 is equipped with a UDH (Universal Document handler) which features the functions of an RDH (Recirculate Document handler) and an SDF (Semi Auto Document Feeder), combined with the finisher system, high speed document processing of 62 sheets per minute is achieved.
In addition, the air feed system reduces the possibility of paper misfeed and the AISC (Active Image Control System) corrects deterioration in copy quality, thereby providing higher reliability.
The large liquid crystal display allows easy use for the operator and service technician.

## 2. Target usage

Copy volume range: 20,000-80,000 copies/month
Average copy volume: 30,000 copies/month

## 3. Product features

### (1) High productivity

① The newly developed UDH allows a high speed processing of duplex copy with single-face documents.

② The combination of the UDH and the finisher allows a high speed processing regardless of copy quantity. In addition, the staple function automatically performs copy finish.

③ Full frame & unit construction
The frame of the SD-2060 is made of a high strength, rigid construction. Because of this, it can endure long period operations.
In addition, the modular construction allows rapid replacement of the sub-assemblies in case of trouble, minimizing down time of the machine.

### (2) High reliability

① Air feed system
By utilizing air pressure without machanical contact, the paper transport capability is more stabilized than the conventional roller feed systems, reducing the possibility of double feed and misfeed.
Auto job recovery
This new function allows a misfeed error to be cancelled automatically by removing the minimum number of misfed paper (s) in case of a misfeed error. The drive section of the main body is divided into several blocks which are independently driven, allowing paper feeding to continue in the blocks after the misfeed block, thus minimizing the number of jammed pages to be removed after the misfeed error.

③ Communication error
The SD-3062 can communicate with a remote service center through the telephone line. This feature allows the service technician to identify the error position prior to making a service visit, thereby reducing the servicing time.

### (3) Ease of operation using the LCD message display

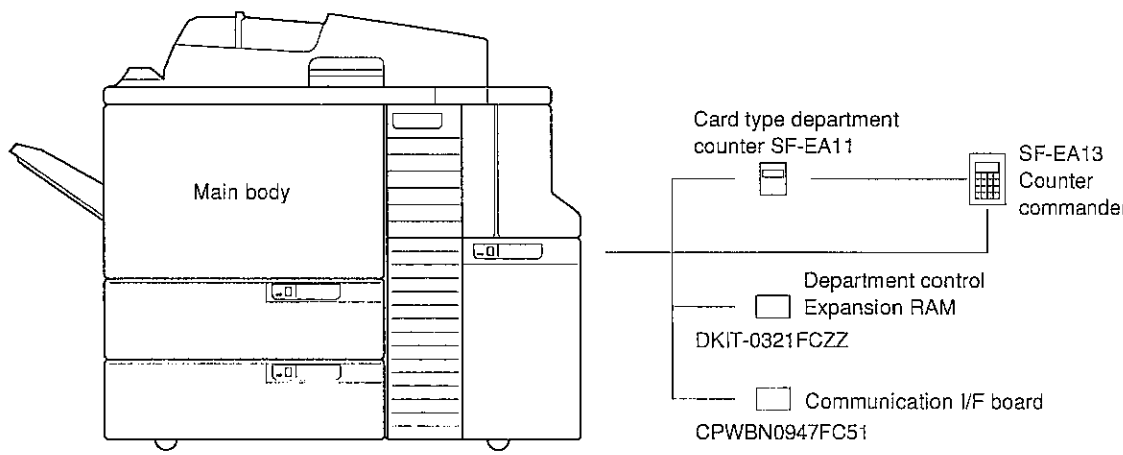
① Key operator programs
By using the key operator programs, various mode settings and adjustments can be performed according to the user's requirements. Accurate account control and proper billing for copy usage can also be accomplished with certain key operator codes.

### (4) High copy quality

① AICS (Active Image Control System)
Equipped with SHARP's unique AICS (Active Image Control System), Toner density on the photoconductor drum is regularly monitored, and any variation in density due to deterioration is automatically corrected, maintaining high copy quality throughout the life of the photoconductor drum.

## 4. System configuration

SD-3062



# [2] PRODUCT SPECIFICATIONS

## 1. Basic specifications

(1) Type: Console

(2) Kinds of originals

| | |
|---|---|
| Max. original size | A3, 11″ × 17″ |
| Copying size | 5.5″ × 8.5″ – 11″ × 17″, A3 – A5 (Fixed size) |

(3) Copy speed

| Paper size | Normal copy | Reduction (50%) | magnification (200%) |
|---|---|---|---|
| 11″ × 17″ | 35 sheets/min | 35 sheets/min | 34 sheets/min |
| 8.5″ × 14″ | 40 sheets/min | 38 sheets/min | 39 sheets/min |
| 8.5″ × 11″ (Portrait) | 62 sheets/min | 52 sheets/min | 43 sheets/min |
| 8.5″ × 11″ (Landscape) | 44 sheets/min | 43 sheets/min | 42 sheets/min |
| A3 | 35 sheets/min | 35 sheets/min | 34 sheets/min |
| B4 | 40 sheets/min | 38 sheets/min | 39 sheets/min |
| A4 (Portrait) | 62 sheets/min | 52 sheets/min | 43 sheets/min |
| A4 (Landscape) | 44 sheets/min | 43 sheets/min | 42 sheets/min |
| B5 (Portrait) | 62 sheets/min | 57 sheets/min | 43 sheets/min |
| B5 (Landscape) | 44 sheets/min | 43 sheets/min | 42 sheets/min |

(4) Paper feed

| | |
|---|---|
| Paper feed system | 3-tray, multi manual feed (Trays can be locked.) |
| Paper feed capacity | 4100 (2000 + 1000 × 2 + 100, 80g/m$^2$) |

(5) Warmup time SD-3062: Approx. 5 min

(6) First copy time

| | Document table | When RDH is used: |
|---|---|---|
| Paper feed tray 1 | 4.0 sec | 6.7 sec |
| Paper feed tray 2 | 5.0 sec | 6.9 sec |
| Paper feed tray 3 | 5.5 sec | 7.4 sec |
| Manual paper feed tray | 4.0 sec | 6.8 sec |

(7) Misfeed recovery time Within 5 sec (Conditions: Misfeed in a section other than the fuser section within 60 sec from opening the door in the standard conditions)

(8) Appearance

| | |
|---|---|
| Dimensions (W × D × H) | 1545 × 731 × 1038 mm |
| Installation area | 2567 × 2531mm (fixed)<br>2067 × 2031 (movable) |

(9) Weight Approx. 275 kg (526 lbs)

(10) Power source, max. power consumption

| | SD-3062 |
|---|---|
| Power | 120V/60Hz<br>220 – 230V/50Hz<br>240V/50Hz |
| Max. power consumption | 2.0KW |

## 2. Functions

(1) Basic functions

| | |
|---|---|
| Multicopying | 1 – 999 sheets |
| Copy density control | Automatic mode, manual mode (9 steps), photo mode (9 steps),TSM mode (except UK) |
| Tray selection | Automatic (Can be inhibited by the key operator program.) |
| Paper/magnification ratio selection | Possible in RDH operation |
| RDH | Simplex or duplex originals, face-up setting |
| Finish | Offset stack, staple (Non-offset possible) |
| Automatic duplex copying | One-side original → duplex copy<br>Duplex original → duplex copy |

(2) Magnification ratio

| | |
|---|---|
| Fixed magnification ratio | Inch: 50, 64, 77, 95, 100, 121, 129, 141, 200%<br>AB: 50, 70, 81, 86, 100, 115, 122, 141, 200% |
| Zooming sizes | 50 – 200%, 151 steps in 1% increment |

(3) Additional functions

| | |
|---|---|
| Dual page copy | Available |
| Binding margin | Right binding, left binding<br>Shift amount<br>AB series<br>(0mm, 3mm, 6mm, 9mm, 12mm, 15mm)<br>Inch series<br>(0″, 1/8″, 1/4″, 3/8″, 1/2″, 5/8″) |
| Edge erase | Edge erase, center erase, edge + center erase |
| Cover insertion | Cover only, back cover only, both cover and back cover<br>Cover copying available (single copy, duplex copy) |
| Index paper insertion | Max. insertion quantity: 18 sheets<br>Index paper copying available (Single copying, duplex copying) |
| OHP index sheet | Index paper copying available |
| Auditor | Standard 500 departments, expandable to max. 3100 departments<br>(When DKIT-0321FCZZ is installed.) |
| Job program | Number of programs 9 (P1 – P9) |
| Communication feature | Available when CPWBN0947FC51 is installed |

| | Duplex | Staple | Binding margin | Edge erase | 1-set 2-copy | Cover paper/ index paper |
|---|---|---|---|---|---|---|
| Staple | ○ | | | | | |
| Binding margin | ○ | ○ | | | | |
| Edge erase | ○ | ○ | ○ | | | |
| 1-set 2-copy | ○ | ○ | ○※2 | ○ | | |
| Cover paper/index paper | ○※1 | ○ | ○ | ○ | × | |
| OHP index paper | × | × | ○ | ○ | ○ | × |

※1: Duplex copy of cover paper/index paper cannot be made.

※2: Binding margin is provided only in the right page (the left side on the document table).

# 3. Details of each section

## ① Original entry section

(1) Platen

| | |
|---|---|
| Max. original size | A3/11″ × 17″ |
| Original reference position | Center reference (Set at left end) |

(2) UDH

| | | |
|---|---|---|
| Document capacity | | 50 sheets |
| Document size | RDH | B5 - A3/8.5″ × 11 - 11″ × 17″ |
| | SDF | A5 - A3/5.5″ × 8.5″ - 11″ × 17″ |
| Document weight | RDH | 60 – 90g/m$^2$ (50 – 128g/mm)<br>16 – 24 lbs (13 – 32 lbs)<br>(Computer form with perforated area removed (8.5″ × 11″), 2-hole paper, 3-hole paper) |
| | SDF | 50 – 128g/m$^2$ (176, 200g/m$^2$)<br>13 – 32 lbs (65, 110 lbs)<br>Separated computer form with perforated area attached (5.5″ × 8.5″ – 11″ × 14.7/8″), multi-hole paper) |
| Random/mix paper feed | | Not available |
| Detection size (RDH only) | | 8.5″ × 11″, 8.5″ × 14″, 11″ × 17″, 8.5″ × 11″R, 8.5″ × 13″, B5, A4, B4, A3, B5R, A4R |

## ② Paper feed section

Copying size

A5 to A3, 5.5" × 8.5" to 11" x 17""

| Paper feed port | Capacity | Paper size: Applicable range | Paper size: Detecting size | Paper weight | |
|---|---|---|---|---|---|
| First tray | 2000 sheets | A4<br>8.5″×11″ | A4<br>8.5″×11″ | 16-24 lbs<br>60 – 90g/m$^2$ | Standard paper only |
| Second tray<br>Third tray | 1000 sheets | Inch:<br>8.5″×11″ – 11″×17″ | 8.5″ × 11″R,<br>8.5″ × 14″,<br>11″×17″, A4 | 16-32 lbs<br>60 – 128g/m$^2$ | Standard paper only |
| | | SUK, SEEG:<br>A4 – A3 | A4, B4, A3, A4R<br>8.5″ × 11″,<br>8.5″ × 14″ | | |
| | | SCA:<br>A4 – A3 | A4, B4, A4R,<br>8.5″ × 11″<br>8.5″ × 13″ | | |
| Manual feed tray | 100 sheets | Inch:<br>5.5″×8.5″ – 11″×17″ | 5.5″ × 8.5″,<br>8.5″ × 11″,<br>8.5″ × 11″R,<br>8.5″ × 14″<br>11″ × 17″, A4 | 13-32 lbs<br>50 – 128g/m$^2$ | Index paper<br>200g 100 lb)<br>Cover paper<br>176g, (65 lb)<br>OHP, etc. |
| | | SUK, SEEG:<br>A5 – A3 | A5, A4, B4,<br>A4R,<br>8.5″ × 11″ | | |
| | | SCA:<br>A5 – A3 | A5, A4, B4, A3,<br>A4R<br>8.5″ × 11″,<br>8.5″ × 13″ | | |

## ③ Duplex section

| | |
|---|---|
| Paper size | B5, A4, B4, A3, B5R, A4R,<br>8.5″ × 11″(R) 8.5″ × 14″, 11×17 |
| Paper weight | 16-24 lbs 60 – 90g/m$^2$ |
| Duplex tray capacity | 50 sheets (80g/m$^2$/20 lb bond) |

## ④ Finishing (Finisher)

(1)

| | | |
|---|---|---|
| Offset stacker | Capacity | 500 sheets (80g/m2) |
| | Offset quantity | 25mm |
| | Overflow detection | Available |
| | Alignment | Back and forth, right and left about 5mm |
| Stapler | Stapling capacity and size | 8.5″ × 11″,<br>8.5″ × 11″R, 8.5″ × 13″,<br>8.5″ × 14″, B5, A4, A4R,<br>B4: Max. 50 sheets<br>(80g/m$^2$) 11″ × 17″,<br>A3: Max. 25 sheet<br>(80g/m$^2$) |
| | Stapling position | Left upper corner, slant 1 position |
| | Stapler cartridge | 5000 pcs. |
| | Stapler detection | Available |
| | Alignment | Shift within 3mm |

# 4. Other options

(1) Card counter (SF-EA11)

(2) Commander (SF-EA13)

(3) Communication interface board (CPWBN0947FC51), fixing screw: (XHBSD40P10000), mounting plate (CPLTM4130FC52).

(4) Department control expansion RAM (DKIT-0321FCZZ)

(5) Key sheet and operation manual kits.

| | |
|---|---|
| English | SD-260SE |
| German | SD-260SG |
| French | SD-260SF |
| Dutch | SD-260SH |
| Spanish | SD-260SS |
| Italian | SD-260SI |

# 5. Supply parts

## SD-3062 SUPPLIES LIST (SEC)

| No. | ITEM | CONTENTS | | LIFE | MODEL NAME | Packing Unit | REMARK |
|---|---|---|---|---|---|---|---|
| 1 | Drum | OPC Drum | x 1 | 250K | SD-360DR | 6 | |
| 2 | Developer | Developer | (1.0Kg ) x10 | 250K ( x 5 ) | SD-360MD | 1 | Two packs should be changed in replacement.<br>(SD-360ND) x 10 = SD-360MD |
| 3 | Toner | Toner Cartridge | (0.93Kg ) x10 | 28K ( x 10) | SD-360MT | 1 | (SD-360NT) x 10 = SD-360MT |
| 4 | Upper Heat Roller Kit | Upper Heat Roller<br>Upper Separation Pawl | x 1<br>x 4 | 500K | SD-360UH | 5 | |
| 5 | Lower Heat Roller Kit | Lower Heat Roller<br>Lower Separation Pawl | x 1<br>x 4 | 250K | SD-360LH | 5 | |
| 6 | Cleaner Blade | Cleaner Blade | x 10 | 125K ( x 10) | SD-360CB | 1 | |
| 7 | Upper Cleaning Roller | Upper Cleaning Roller | x 10 | 125K ( x 10) | SD-360UR | 1 | |
| 8 | Lower Cleaning Roller | Lower Cleaning Roller | x 10 | 125K ( x 10) | SD-360LR | 1 | |
| 9 | Waste Toner Bottle | Waste Toner Bottle | x 1 | 125K | SD-360TB | 5 | |
| 10 | Staple Cartridge | Staple Cartridge | x 5 | 5000Staple ( x 5 ) | SD-LS20 | 10 | For SD-2075/3075, SF-S53<br>(SD-SC20) x 5 = SD-LS20 |
| 11 | Convenience Parts Kit | 360CP<br>(Drum Separation Pawl<br>(Charging Plate Unit<br>(CL Side Seal F/R<br>(DV Side Seal F/R<br>(Toner Receiving Seal | x 5<br>x 2)<br>x 1)<br>x 1)<br>x 1)<br>x 1) | 250K | SD-360CK | 1 | (360CP) x 5 = 360CK) |

※ The waste toner bottle (1 pc/125K), the screen grid (250K), the charger wire (250K), the ozone filter (500K), the DV seal (500K), and the CL brush roller (500K) are supplied as service parts.
The charging plate unit (250K), the drum separation pawl (250K), and the toner receiving seal (250K) are provided as service parts though they are sales items.

## SD-3062 SUPPLIES LIST (SECL)

| No. | ITEM | CONTENTS | | LIFE | MODEL NAME | Packing Unit | REMARK |
|---|---|---|---|---|---|---|---|
| 1 | Drum | OPC Drum | x 1 | 250K | SD-360DR | 6 | |
| 2 | Developer | Developer | (1.0Kg ) x10 | 250K ( x 5 ) | SD-360MD | 1 | Two packs should be changed in replacement.<br>(SD-360ND) x 10 = SD-360MD |
| 3 | Toner | Toner Cartridge | (0.93Kg ) x10 | 28K ( x 10) | SD-360MT | 1 | (SD-360NT) x 10 = SD-360MT |
| 4 | Upper Heat Roller Kit | Upper Heat Roller<br>Upper Separation Pawl | x 1<br>x 4 | 500K | SD-360UH | 5 | |
| 5 | Lower Heat Roller Kit | Lower Heat Roller<br>Lower Separation Pawl | x 1<br>x 4 | 250K | SD-360LH | 5 | |
| 6 | 125K Maintenance Kit | Cleaner Blade<br>Waste Toner Bottle<br>Upper Cleaning Roller<br>Lower Cleaning Roller | x 10 | 125K | SD-360KA | 5 | |
| 7 | 250K Maintenance Kit | Drum Separation Pawl<br>Charging Plate Unit<br>Toner Receiving Seal<br>DV Side Seal F/R<br>CL Side Seal F/R | x 2<br>x 1<br>x 1<br>x 1<br>x 1 | 250K | SD-360KB | 5 | |
| 8 | Staple Cartridge | Staple Cartridge | x 5 | 5000Staple ( x 5 ) | SD-LS20 | 10 | For SD-2075/3075, SF-S53<br>(SD-SC20) x 5 = SD-LS20 |

## SD-3062 SUPPLIES LIST (SEEG, SUK)

| No. | ITEM | CONTENTS | LIFE | MODEL NAME | Packing Unit | REMARK |
|---|---|---|---|---|---|---|
| 1 | Drum | OPC Drum x 1 | 250K | SD-360DR | 6 | |
| 2 | Developer | Developer (1.0Kg) x 10 | 250K ( x 5 ) | SD-360MD | 1 | Two packs should be changed in replacement.<br>(SD-360DV) x 10 = SD-360LD) |
| 3 | Toner | Toner Cartridge (0.93Kg) x 10 | 28K ( x 10) | SD-360MT | 1 | (SD-360T) x 10 = SD-360LT) |
| 4 | Upper Heat Roller Kit | Upper Heat Roller x 1<br>Upper Separation Pawl x 4 | 500K | SD-360UH | 5 | |
| 5 | Lower Heat Roller Kit | Lower Heat Roller x 1<br>Lower Separation Pawl x 4 | 250K | SD-360LH | 5 | |
| 6 | 125K Maintenance Kit | Cleaner Blade x 1<br>Waste Toner Bottle x 1<br>Upper Cleaning Roller x 1<br>Lower Cleaning Roller x 1 | 125K | SD-360KA | 5 | |
| 7 | 250K Maintenance Kit | Drum Separation Pawl x 2<br>Charging Plate Unit x 1<br>Toner Receiving Seal x 1<br>DV Side Seal F/R x 1<br>CL Side Seal F/R x 1 | 250K | SD-360KB | 5 | |
| 8 | Staple Cartridge | Staple x 5<br>Cartridge | 5000Staple ( x 5 ) | SD-LS20 | 10 | For SD-2075/3076, SF-S53<br>(SD-SC20) x 5 = SD-LS20 |

## SD-3062 SUPPLIES LIST (Asia, Latin America)

| No. | ITEM | CONTENTS | LIFE | MODEL NAME | Packing Unit | REMARK |
|---|---|---|---|---|---|---|
| 1 | Drum | OPC Drum x 1 | 250K | SD-360DR | 6 | |
| 2 | Developer | Developer (1.0Kg ) x10 | 250K ( x 5 ) | SD-360CD | 1 | Two packs should be changed in replacement.<br>(SD-360ND) x 10 = SD-360CD |
| 3 | Toner | Toner Cartridge (0.93Kg ) x10 | 28K ( x 10) | SD-360CT | 1 | (SD-360ST) x 10 = SD-360CT |
| 4 | Upper Heat Roller Kit | Upper Heat Roller x 1<br>Upper Separation Pawl x 4 | 500K | SD-360UH | 5 | |
| 5 | Lower Heat Roller Kit | Lower Heat Roller x 1<br>Lower Separation Pawl x 4 | 250K | SD-360LH | 5 | |
| 6 | 125K Maintenance Kit | Cleaner Blade x 1<br>Waste Toner Bottle x 1<br>Upper Cleaning Roller x 1<br>Lower Cleaning Roller x 1 | 125K | SD-360KA | 5 | |
| 7 | 250K Maintenance Kit | Drum Separation Pawl x 2<br>Charging Plate Unit x 1<br>Toner Receiving Seal x 1<br>DV Side Seal F/R x 1<br>CL Side Seal F/R x 1 | 250K | SD-360KB | 5 | |
| 8 | Staple Cartridge | Staple Cartridge x 5 | 5000Staple ( x 5 ) | SD-LS20 | 10 | For SD-2075/3076, SF-S53<br>(SD-SC20) x 5 = SD-LS20 |

## SD-3062 SUPPLIES LIST (SCA, SCNZ, Middle East, Africa))

| No. | ITEM | CONTENTS | | LIFE | MODEL NAME | Packing Unit | REMARK |
|---|---|---|---|---|---|---|---|
| 1 | Drum | OPC Drum | x 1 | 250K | SD-360DM | 6 | |
| 2 | Developer | Developer | (1.0Kg ) x10 | 250K ( x 5 ) | SD-360LD | 1 | Two packs should be changed in replacement.<br>(SD-360DV) x 10 = SD-360LD |
| 3 | Toner | Toner Cartridge | (0.93Kg ) x10 | 28K ( x 10) | SD-360LT | 1 | (SD-360T) x 10 = SD-360LT |
| 4 | Upper Heat Roller Kit | Upper Heat Roller<br>Upper Separation Pawl | x 1<br>x 4 | 500K | SD-360UH | 5 | |
| 5 | Lower Heat Roller Kit | Lower Heat Roller<br>Lower Separation Pawl | x 1<br>x 4 | 250K | SD-360LH | 5 | |
| 6 | 125K Maintenance Kit | Cleaner Blade<br>Waste Toner Bottle<br>Upper Cleaning Roller<br>Lower Cleaning Roller | x 1<br>x 1<br>x 1<br>x 1 | 125K | SD-360KA | 5 | |
| 7 | 250K Maintenance Kit | Drum Separation Pawl<br>Charging Plate Unit<br>Toner Receiving Seal<br>DV Side Seal F/R<br>CL Side Seal F/R | x 2<br>x 1<br>x 1<br>x 1<br>x 1 | 250K | SD-360KB | 5 | |
| 8 | Staple Cartridge | Staple Cartridge | x 5 | 5000Staple ( x 5 ) | SD-LS20 | 10 | For SD-2075/3076, SF-S53<br>(SD-SC20) x 5 = SD-LS20 |

## 6. Job efficiency

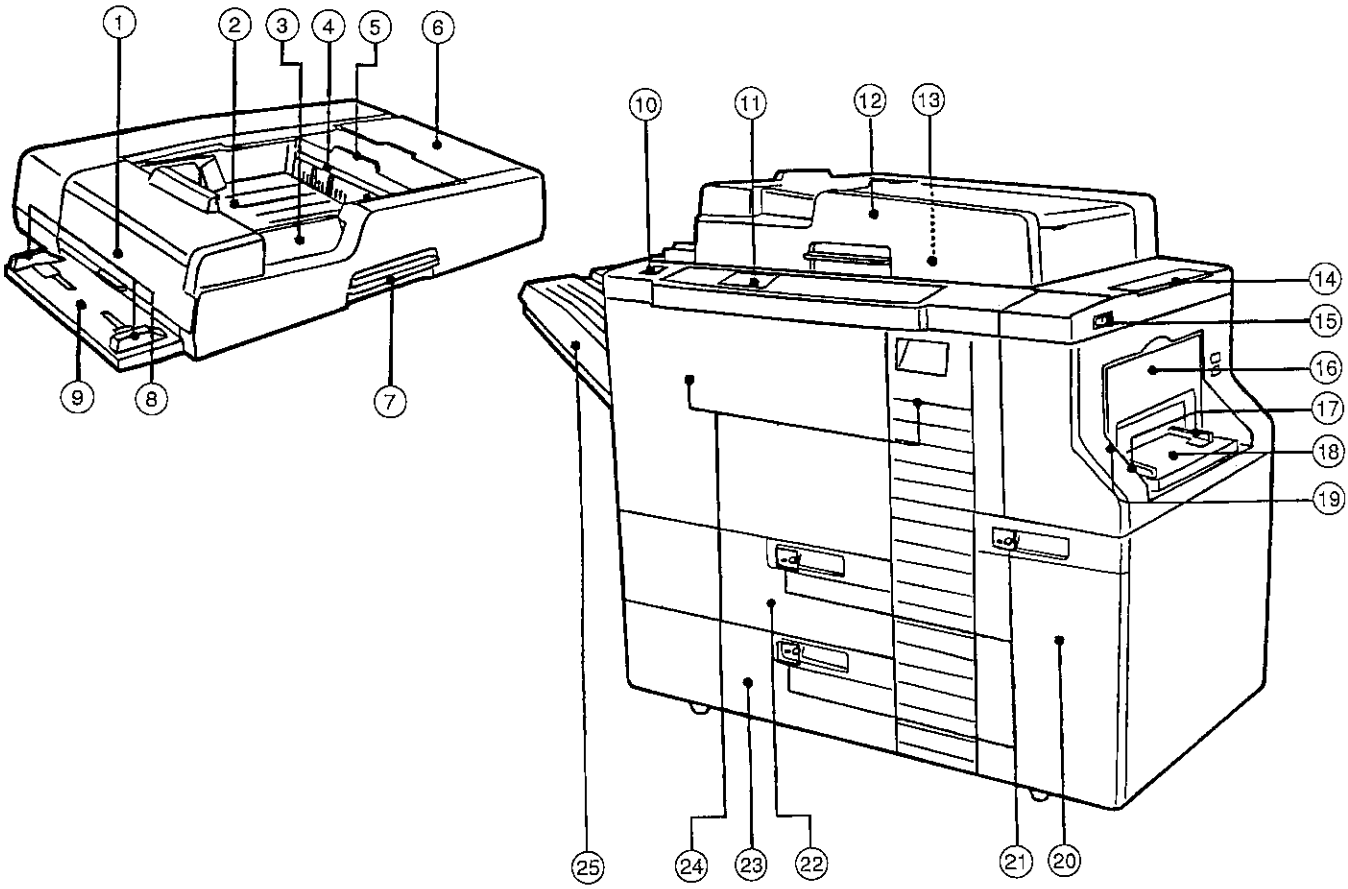
Paper: A4, Paper feed: Tray 1, Finish: Stapling

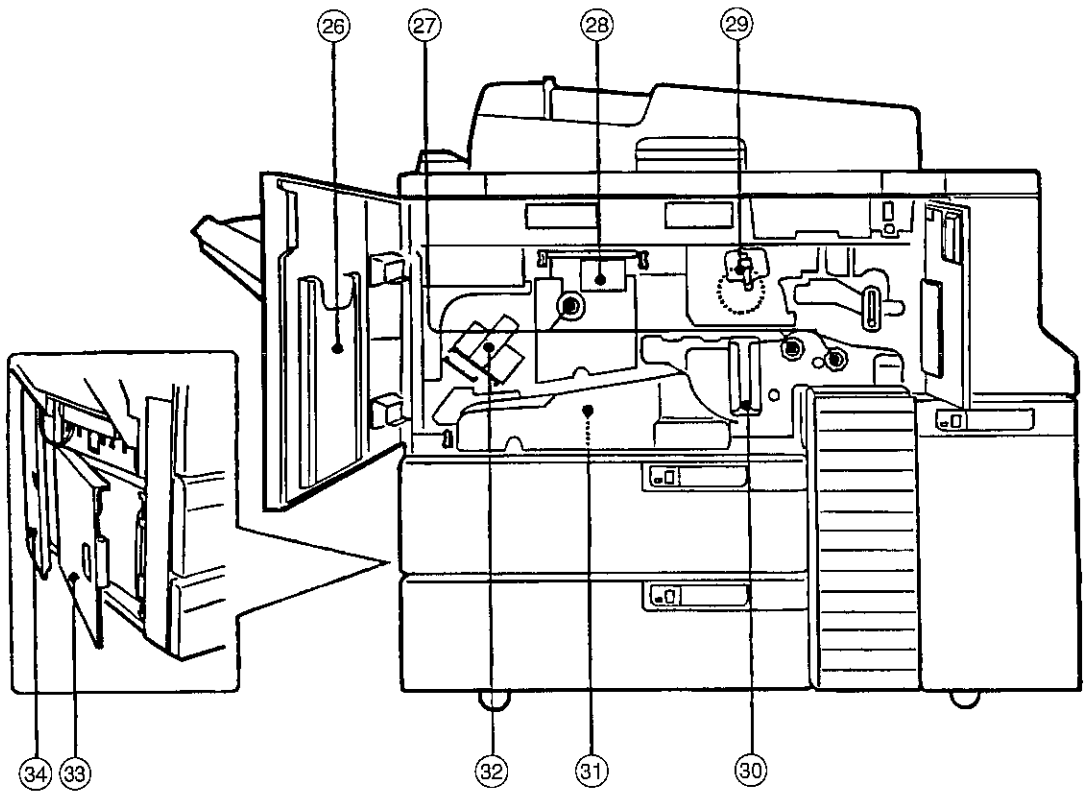
| Copy mode | | Single → Single | | Single → Duplex | | Duplex → Duplex | |
|---|---|---|---|---|---|---|---|
| No. of original screens | Copy quantity | CPM conversion value | Job efficiency (%) | CPM conversion value | Job efficiency (%) | CPM conversion value | Job efficiency (%) |
| 10 | 1 | 36.3 | 58.5 | 22.2 | 35.8 | 34.8 | 56.1 |
| 10 | 3 | 48.2 | 77.7 | 36.9 | 59.5 | 46.1 | 74.4 |
| 10 | 5 | 51.2 | 82.6 | 42.4 | 68.4 | 49.4 | 79.7 |
| 10 | 10 | 53.9 | 86.9 | 48.0 | 77.4 | 52.1 | 84.0 |

※ The above figures were obtained by measurement with a stop watch.

# [3] PRODUCT OUTLINE

## 1. Appearance and structure

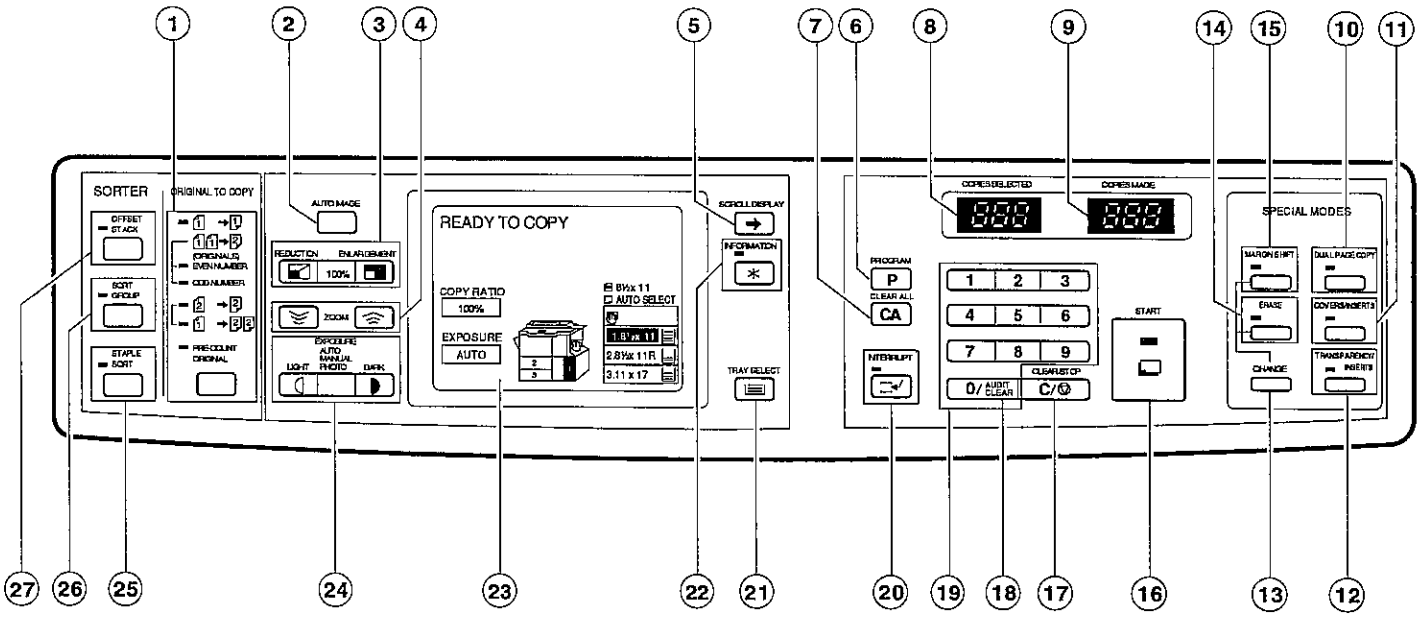


### Appearance and structure

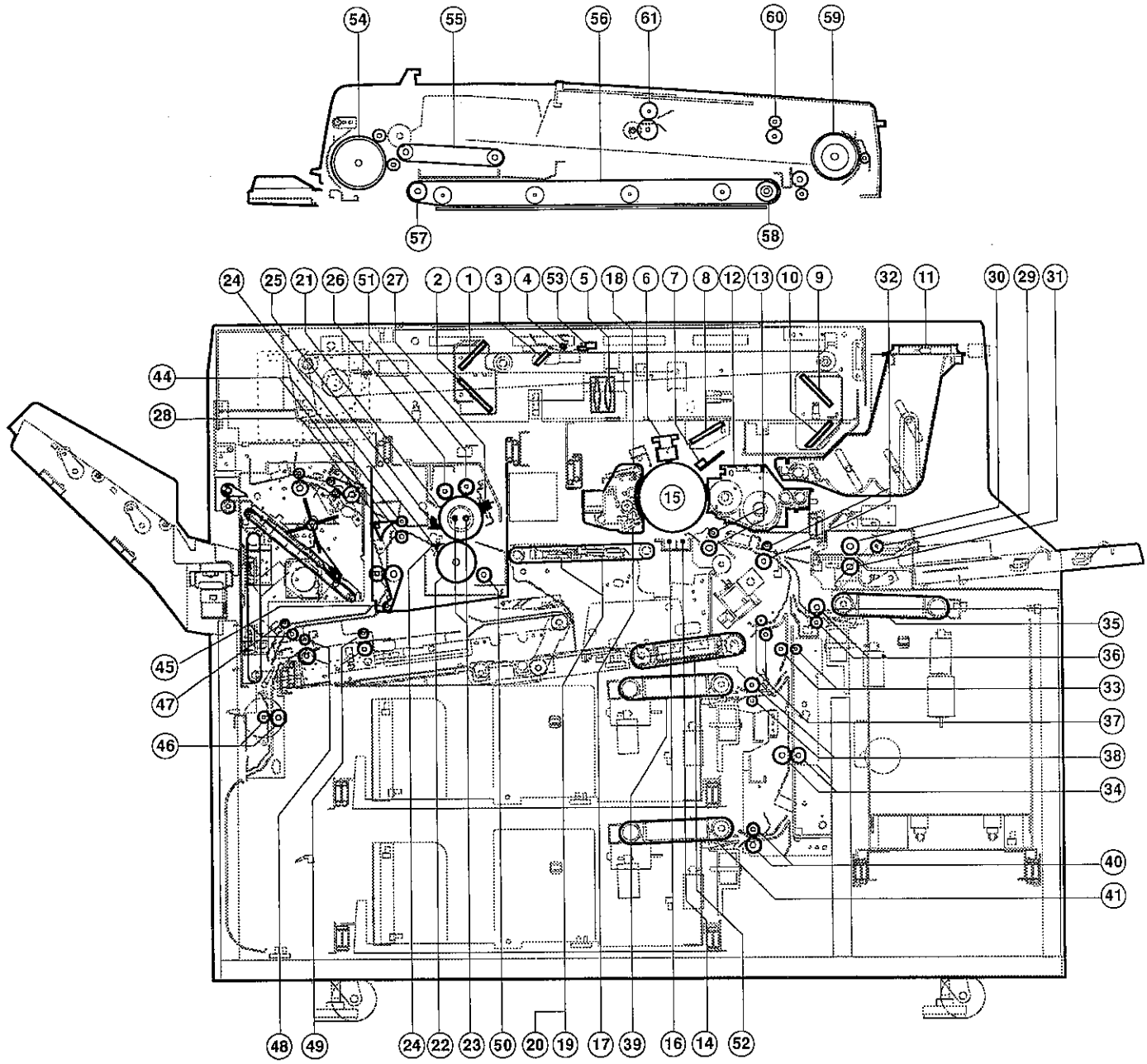
| | | | | | |
|---|---|---|---|---|---|
| ① | Document feed section cover | ② | Document set table | ③ | Document guide |
| ④ | Document exit section | ⑤ | Document rear edge guide | ⑥ | Document feeder cover |
| ⑦ | UDH open/close lever | ⑧ | SDF feed document guide | ⑨ | SDF feed document set table |
| ⑩ | Clip tray | ⑪ | Operation panel | ⑫ | Universal document handler (UDH) |
| ⑬ | Document table | ⑭ | Toner box cover | ⑮ | Power switch |
| ⑯ | Auxiliary tray | ⑰ | Manual feed guide | ⑱ | Manual feed tray |
| ⑲ | Paper feed pressure release button | ⑳ | Paper feed tray 1 | ㉑ | Paper feed tray descending button/lamp |
| ㉒ | Paper feed tray 2 | ㉓ | Paper feed tray 3 | ㉔ | Front cover |
| ㉕ | Offset tray | ㉖ | Operation manual holding space | ㉗ | Roller rotating knob |
| ㉘ | Fuser unit | ㉙ | Photoconductor drum | ㉚ | Transport section open/close lever |
| ㉛ | Duplex tray | ㉜ | Staple unit | ㉝ | Left side cover |
| ㉞ | Toner collection container storing section cover | | | | |

## 2. Operation panel



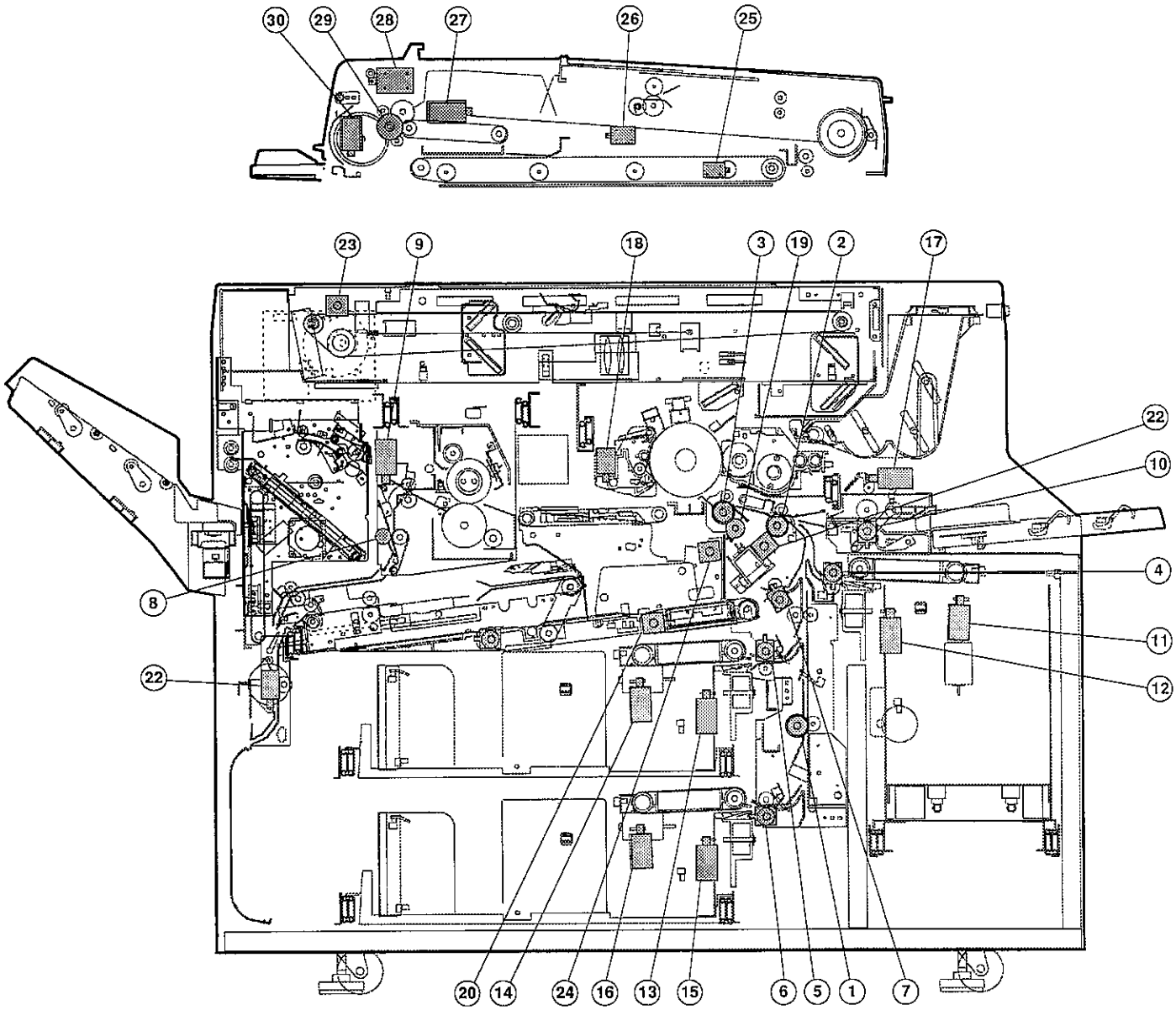

| | | | | | |
|---|---|---|---|---|---|
| ① | Document → Copy selection key/lamp | ② | Magnification ratio auto selection key | ③ | Reduction, normal, enlargement key |
| ④ | Zoom key | ⑤ | Message forward feed key | ⑥ | Program key |
| ⑦ | Clear all key | ⑧ | Copies selected display | ⑨ | Copies made display |
| ⑩ | 1-set 2-copy key/display lamp | ⑪ | Display/index paper insertion key/display lamp | ⑫ | OHP index paper insertion key/display lamp |
| ⑬ | Setting change key | ⑭ | Edge erase key/display lamp | ⑮ | Binding margin key/display lamp |
| ⑯ | Start key/Start lamp | ⑰ | Clear/Stop key | ⑱ | Zero/Department count end key |
| ⑲ | Copy quantity set key | ⑳ | Interruption key/display lamp | ㉑ | Paper feed tray select key |
| ㉒ | Operation guide key/display lamp | ㉓ | LCD display section | ㉔ | Copy density select key |
| ㉕ | Staple key/display lamp | ㉖ | Alignment key/display lamp | ㉗ | Offset stack key/display lamp |

## 3. Internal structure



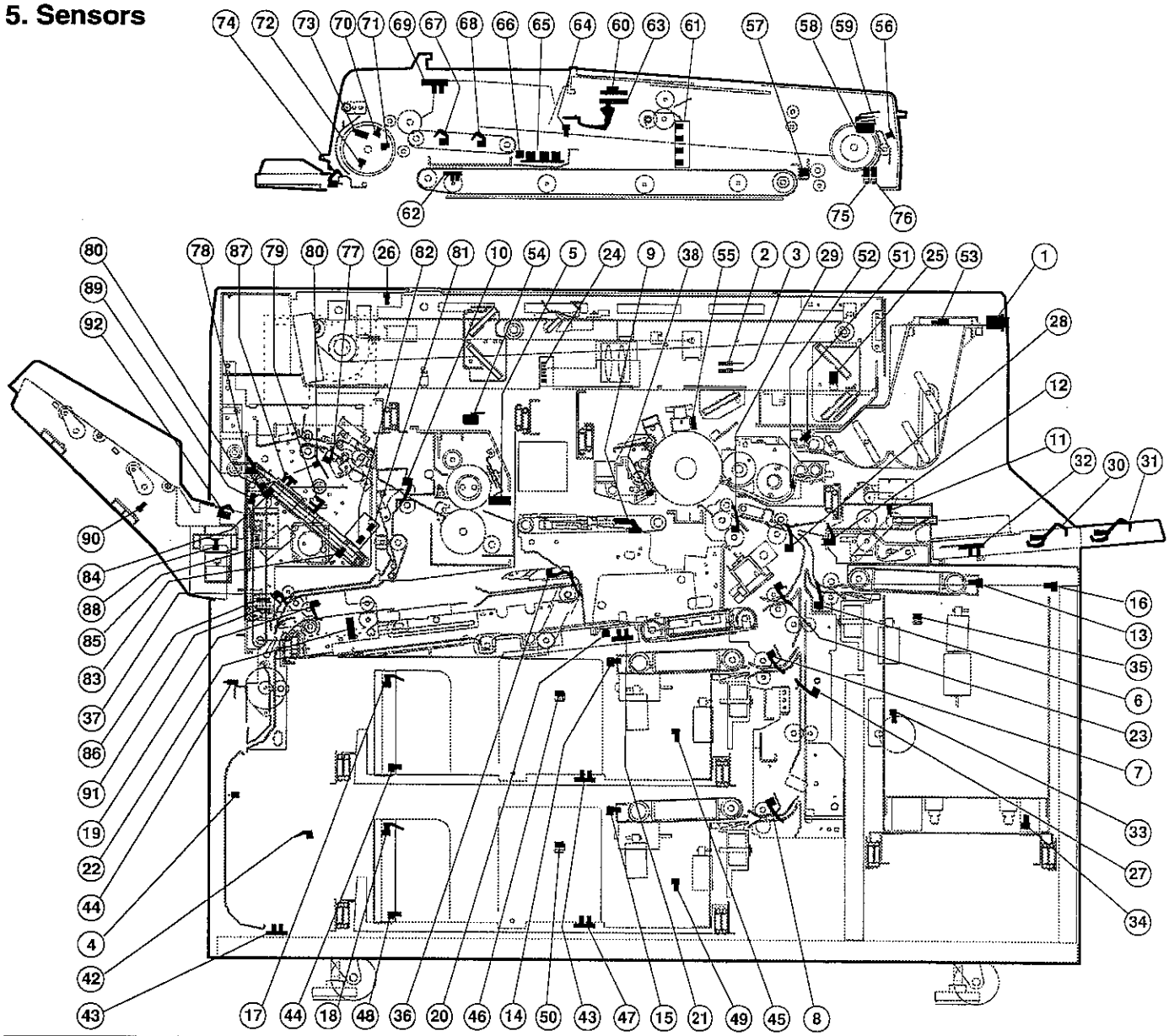
| | | | | | |
|---|---|---|---|---|---|
| ① | No. 2 mirror | ② | No. 3 mirror | ③ | No. 1 mirror |
| ④ | Copy lamp | ⑤ | Lens unit | ⑥ | Main charger unit |
| ⑦ | Blank lamp | ⑧ | No. 6 mirror | ⑨ | No. 4 mirror |
| ⑩ | No. 5 mirror | ⑪ | Toner hopper | ⑫ | Developer unit |
| ⑬ | Resist roller | ⑭ | Transfer charger | ⑮ | Photoconductor drum |
| ⑯ | Separation charger | ⑰ | Drum separation pawl | ⑱ | Cleaner unit |
| ⑲ | Suction unit | ⑳ | Suction belt | ㉑ | Upper heat roller |
| ㉒ | Lower heat roller | ㉓ | Heater lamps | ㉔ | Lower separation pawl |
| ㉕ | Upper separation pawl | ㉖ | Sub cleaning roller | ㉗ | Fuser thermistor/thermostat |
| ㉘ | Paper exit separation gate | ㉙ | Manual feed takeup roller | ㉚ | Manual paper feed roller |
| ㉛ | Manual feed separation roller | ㉜ | Transport roller | ㉝ | Transport roller |
| ㉞ | Transport roller | ㉟ | 2000-sheet tray paper feed belt | ㊱ | 2000-sheet tray transport roller |
| ㊲ | Duplex copy tray (paper feed) roller | ㊳ | Upper 1000-sheet tray (paper feed) roller | ㊴ | Upper 1000-sheet tray paper feed belt |
| ㊵ | Lower 1000-sheet tray (paper feed) roller | ㊶ | Lower 1000-sheet tray paper feed belt | ㊷ | Paper exit transport roller |
| ㊸ | Paper exit transport roller | ㊹ | Fuser transport roller | ㊺ | Reversing belt |
| ㊻ | Reverse section transport roller | ㊼ | Reverse section transport roller | ㊽ | Duplex copy tray transport roller |
| ㊾ | Duplex copy tray transport roller | ㊿ | Lower cleaning roller | (51) | Upper cleaning roller |
| (52) | Duplex copy tray paper feed belt | (53) | AE sensor | (54) | Paper feed large roller |
| (55) | Suction belt | (56) | Transport belt | (57) | Transport belt follower belt |
| (58) | Transport belt drive roller | (59) | Feed out large roller | (60) | Shifting intermediate roller |
| (61) | Shifting paper exit roller | | | | |

## 4. Clutches and solenoids



| | Signal name | Name | Function and operation |
|---|---|---|---|
| ① | TRC1 | Transport roller clutch 1 | Transport roller (paper feed tray) rotation |
| ② | TRC2 | Transport roller clutch 2 | Transport roller (in front of the resist roller) rotation |
| ③ | RRC | Resist roller clutch | Resist roller rotation |
| ④ | TBC1 | Paper feed belt clutch 1 | 2000-sheet tray paper feed belt rotation |
| ⑤ | TBC2 | Paper feed belt clutch 2 | Upper 1000-sheet tray paper feed belt rotation |
| ⑥ | TBC3 | Paper feed belt clutch 3 | Lower 1000-sheet tray paper feed belt rotation |
| ⑦ | DBC | Duplex copy paper feed belt clutch | Duplex copy tray paper feed belt rotation |
| ⑧ | DTRC | Duplex copy transport roller clutch | Duplex copy tray transport roller rotation |
| ⑨ | DGS1 | Paper exit/reverse select solenoid 1 | Paper exit/reverse select gate ON/OFF |
| ⑩ | MPFC | Manual paper feed clutch | Multi-copy manual paper feed roller rotation |
| ⑪ | TVVS1 | Paper feed suction valve solenoid 1 | 2000-sheet tray paper feed suction valve open/close |
| ⑫ | TBVS1 | Paper feed blower valve solenoid 1 | 2000-sheet tray paper feed blower valve open/close |
| ⑬ | TBVS2 | Paper feed blower valve solenoid 2 | Upper 1000-sheet tray paper feed blower valve open/close |
| ⑭ | TVVS2 | Paper feed suction valve solenoid 2 | Upper 1000-sheet tray paper feed suction valve open/close |
| ⑮ | TBVS3 | Paper feed blower valve solenoid 3 | Lower 1000-sheet tray paper feed blower valve open/close |
| ⑯ | TVVS3 | Paper feed suction valve solenoid 3 | Lower 1000-sheet tray paper feed suction valve open/close |
| ⑰ | MPFS | Manual paper feed solenoid | Multi-copy paper feed takeup roller pressing |
| ⑱ | PSPS | Drum separation pawl solenoid | Drum separation pawl pressing |
| ⑲ | PSBRK | Transport brake clutch | Paper feed transport brake ON/OFF |
| ⑳ | DVVS | Duplex copy suction valve solenoid | Duplex copy tray suction valve open/close |
| ㉑ | DBVS | Duplex copy blower valve solenoid | Duplex copy tray blower valve open/close |
| ㉒ | DGS2 | Duplex copy reverse gate solenoid 2 | Duplex copy/reverse select gate ON/OFF |
| ㉓ | DSS | Original stopper solenoid | Original stopper ON/OFF |
| ㉔ | DFSS | Duplex copy paper lead edge stopper solenoid | Duplex copy paper lead edge stopper ON/OFF |
| ㉕ | URLSOL | (UDH) Document transport belt holding roller lift up solenoid | Lifts up the transport belt holding roller to reduce friction in document exit |
| ㉖ | URPSOL | (UDH) Document recirculation detection actuator set solenoid | Sets the actuator at the top of the document when starting copying or when circulation of document is completed. |
| ㉗ | UVVSOL | (UDH) Document suction valve solenoid | Opens the suction valve (solenoid ON) to suck a document onto the transport suction belt. |
| ㉘ | USGSOL | (UDH) Document stopper gate solenoid | Descends the stopper gate during standby to protect a document from entering the paper feed section. (Solenoid OFF) |
| ㉙ | UFCL | (UDH) Document paper feed clutch | Rotates the suction belt by driving the document feed motor. |
| ㉚ | UHGSOL | (UDH) Document manual feed gate solenoid | Descends the document stopper gate to allow manual paper feed. (Descends the document stopper gate to allow manual paper feed. (Solenoid ON during standby and manual paper feed.) Lifts up the stopper when RDH mode is used. |

## 5. Sensors

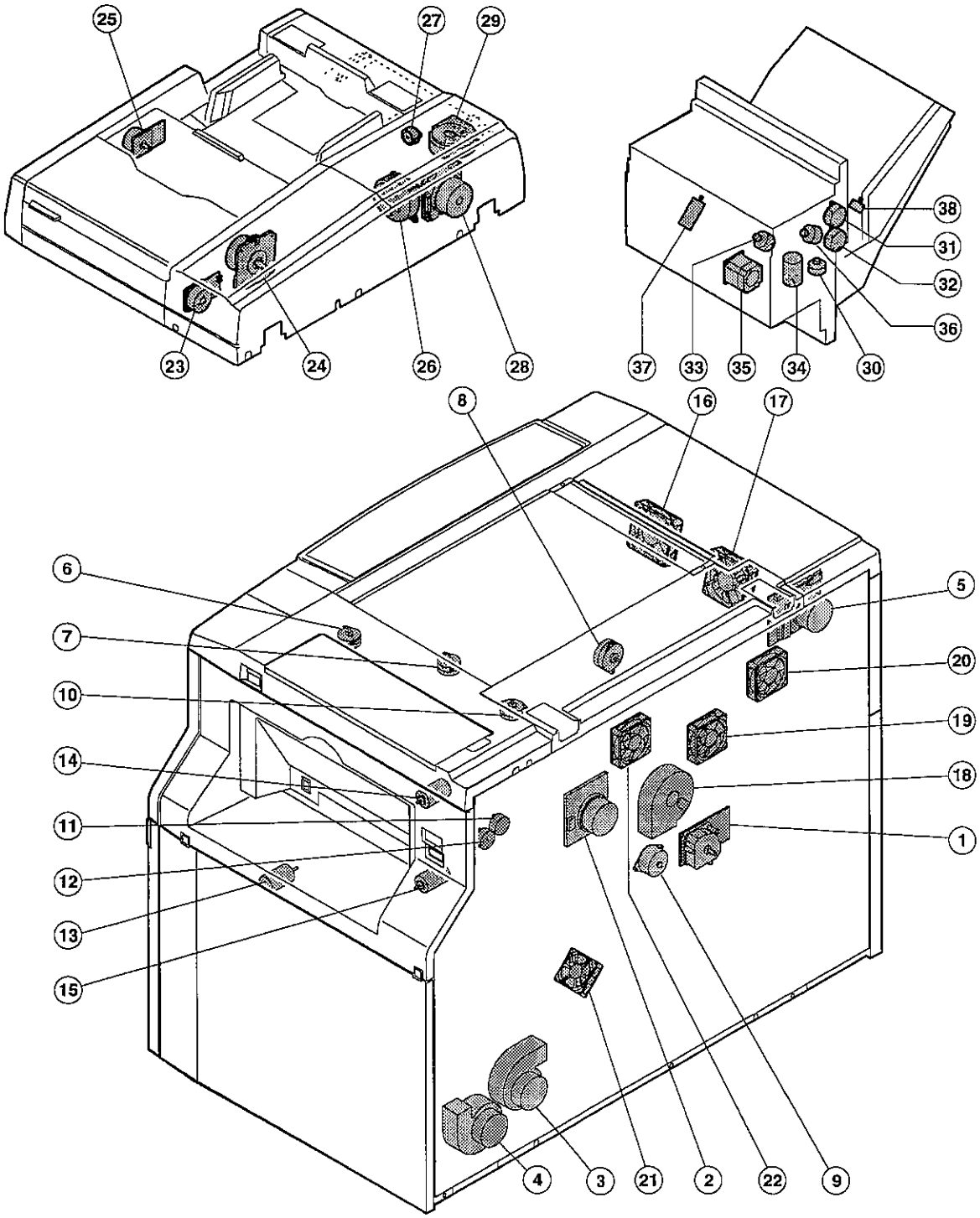


| | Signal name | Name | Function and operation |
|---|---|---|---|
| ① | MSW | AC power switch | For turning ON/OFF the AC power switch. |
| ② | DSW1 | Door switch 1 | For 38V line. L4 display at OFF. |
| ③ | DSW2 | Door switch 2 | For 24V line. CH display at OFF. |
| ④ | DDSW | Duplex copy tray switch | Duplex copy reversing section door switch |
| ⑤ | HL ILSW | Fuser interlock switch | For the heater lamp power line. |
| ⑥ | PFD1 | Paper feed sensor 1 | For detection of paper entry from paper feed tray 1 |
| ⑦ | PFD2 | Paper feed sensor 2 | For detection of paper entry from paper feed tray 2 |
| ⑧ | PFD3 | Paper feed sensor 3 | For detection of paper entry from paper feed tray 3 |
| ⑨ | PSD | Paper separation sensor | For detection of paper transport after transfer and separation in the process section |
| ⑩ | POD | Paper exit sensor | For detection of paper transport after fusing |
| ⑪ | MPED | Manual feed paper empty sensor | For detection of paper presence in the manual feed section |
| ⑫ | MPFD | Manual paper feed sensor | For detection of paper entry in the manual feed section |
| ⑬ | TLMD1 | Paper feed tray upper limit sensor 1 | For detection of the upper limit of the paper feed tray 1 |
| ⑭ | TLMD2 | Paper feed tray upper limit sensor 2 | For detection of the upper limit of the paper feed tray 2 |
| ⑮ | TLMD3 | Paper feed tray upper limit sensor 3 | For detection of the upper limit of the paper feed tray 3 |
| ⑯ | TUD1 | Paper feed tray rising sensor 1 | For detection of the upper limit of paper in the paper feed tray 1 |
| ⑰ | TUD2 | Paper feed tray rising sensor 2 | For detection of the upper limit of paper in the paper feed tray 2 |
| ⑱ | TUD3 | Paper feed tray rising sensor 3 | For detection of the upper limit of paper in the paper feed tray 3 |
| ⑲ | DPPD | Duplex copy tray paper transport sensor | For detection of paper entry from the switchback unit |
| ⑳ | DTPD | Duplex copy tray paper sensor | For detection of paper presence in the duplex copy tray |
| ㉑ | DTW HPS | Duplex copy tray width guide home position sensor | For detection of duplex copy tray paper width guide home position |
| ㉒ | DTBHPS | Duplex copy tray rear edge guide home sensor | For detection of duplex copy tray rear edge guide home position |
| ㉓ | DPFD | Duplex copy tray paper feed sensor | For detection of paper entry from duplex copy tray |
| ㉔ | LHP | Lens home sensor | For detection of lens home position |
| ㉕ | MBHP | No. 4/No. 5 mirror home sensor | For detection of No. 4/No. 5 mirror home position |
| ㉖ | MHP | Mirror home sensor | For detection of mirror home position |
| ㉗ | PPD1 | Paper transport sensor 1 | For detection of paper transport from paper feed tray 3 |
| ㉘ | PPD2 | Paper transport sensor 2 | For detection of paper transport from each paper feed unit |

| | Signal name | Name | Function and operation |
|---|---|---|---|
| ㉙ | PPD3 | Paper transport sensor 3 | For detection of paper in front of the resist roller |
| ㉚ | MPSD1 | Manual feed tray paper size sensor | For detection of manual feed paper length |
| ㉛ | MPSD2 | Manual feed tray paper size sensor | For detection of manual feed paper length |
| ㉜ | MDOP | Manual feed tray open/close sensor | |
| ㉝ | TPTD1 | Paper feed tray PT sensor 1 | For detection of paper feed tray 1 lift motor rotation (Remaining paper quantity display) |
| ㉞ | TLD1 | Paper feed tray lower limit sensor 1 | For detection of the lower limit of paper feed tray 1 |
| ㉟ | TSW1 | Paper feed tray switch 1 | Paper feed tray 1 ON: Paper present, OFF: Paper empty, Blink: Tray is rising or descending. |
| ㊱ | DPID | Duplex copy tray paper entry sensor | For detection of paper entry to the duplex copy tray |
| ㊲ | DSBD | Reverse unit paper entry sensor | For detection of paper entry to the reverse unit |
| ㊳ | PCS | Process control sensor | Reads patch density on the photoconductor surface. |
| ㊴ | TNF | Waste toner full sensor | For detection of waste toner full |
| ㊷ | TB BOX | Waste toner bottle sensor | For detection of waste toner bottle. |
| ㊸ | PS21~26 | Paper feed tray paper size sensor (in PWB) | Paper size is judged by resistance value on the PWB. |
| ㊹ | TLD2 | Paper feed tray lower limit sensor 2 | For detection of the lower limit of paper feed tray 2 |
| ㊺ | TPTD2 | Paper feed tray PT sensor | For detection of paper feed tray 2 lift motor rotation (Remaining paper quantity is displayed.) |
| ㊻ | TSW2 | Paper feed tray switch 2 | Paper feed tray 2 ON: paper present, OFF: paper empty, Blink: Tray is rising or descending. |
| ㊼ | PS31~36 | Paper feed tray paper size sensor (in PWB) | Paper size is judged by resistance value on the PWB. |
| ㊽ | TLD3 | Paper feed tray lower limit sensor 3 | For detection of the lower limit of paper fed tray 3 |
| ㊾ | TPTD3 | Paper feed tray PT sensor 3 | For detection of paper feed tray 3 lift motor rotation (Remaining paper quantity is displayed.) |
| ㊿ | TSW3 | Paper feed tray switch 3 | Paper feed tray 3 ON: paper present, OFF: paper empty, Blink: Tray is rising or descending. |
| (51) | TES | Toner empty sensor | For detection of remaining toner quantity in the toner hopper |
| (52) | TNCS | Toner density sensor | For detection of toner density in the developer |
| (53) | TNCTR | Toner cartridge switch | For detection of hopper cover open when supplying toner |
| (54) | FUSUS | Fuser unit installation sense switch | As the fuser unit lock is released, HL power supply line is turned off. |
| (55) | DMS | Drum marking sensor | For positioning of patch formation in the process control operation |
| (56) | UPD5 | (UDH) Paper exit section document sensor 5 | Detects that a document reaches the center of the paper exit reverse section. (H: paper presence) |
| (57) | UPD4 | (UDH) Paper exit r section document sensor 4 | Detects that a document reaches the paper exit reverse section from the glass surface. (L: paper presence) |
| (58) | UDSW3 | UDH upper cover open/close detecting switch | The switch is connected to the 38V power line for the paper exit reverse motor (UOM1) and the moving unit paper exit motor (UOM2). With the upper cover open, the 38V line is turned off. (OFF: Upper cover open) |
| (59) | UJRSW2 | (UDH) Paper exit reverse section jam process detecting switch | Opens or closes the UDH to process a jam in the reverse section. the switch is connected at the same position as UDSW1. |
| (60) | UPD6 | (UDH) Moving unit document exit sensor | Detects that a document reaches the moving unit paper exit section. (H: Paper presence) |
| (61) | ULSD1<br>ULSD2<br>ULSD3<br>ULSD4 | (UDH) Document length sensor (PWB)<br>Paper size / ULSD1 / ULSD2 / ULSD3 / ULSD4<br>A3R L H L H<br>B4R L L H H<br>A4R H L H L<br>B5R H H L H<br>A4 H L H H<br>B5 L H H H<br>Paper size / ULSD1 / ULSD2 / ULSD3 / ULSD4<br>Ledger L L L H<br>Legal H H L L<br>A4 L H H L<br>Letter R H L L H<br>Letter L H H L | |
| (62) | ULSLD | (UDH) Document length detecting signal latch timing sensor | Enables the document length detecting signal. (H: Latch) |
| (63) | URD | (UDH) Document recirculation sensor | Senses recirculation of multi documents. Also senses document separation by air blow at the rear edge of documents.(L: When sensing recirculation) |
| (64) | UBFD | (UDH) Document transport belt slack sensor | Controls the transport belt slack for assuring rapid document transport. (L: No slack) |
| (65) | UWSD1<br>UWSD2<br>UWSD3 | (UDH) Document width sensor (PWB)<br>Paper size / UWSD1 / UWSD2 / UWSD3<br>A3R, A4 L H H<br>B4R, B5 H L L<br>A4R H H L<br>B5R L H L<br>Paper size / UWSD1 / UWSD2 / UWSD3<br>Letter,W letter R Full scap L L H<br>Letter R Legal R H L H | |
| (66) | UPED | (UDH) Paper feed tray upper document set sensor | Senses hat a document is set on the paper feed tray. (L: Paper presence) |
| (67) | UPFD1 | (UDH) Paper feed tray upper document separation sensor 1 | Detects that a document is separated when the document is floated by air blow. Two sensors are provided in the front and the rear side to detect upwards and downwards curls. (L: Document floating) |
| (68) | UPFD2 | (UDH) Paper feed tray upper document separation sensor 2 | Common with UPFD1. |
| (69) | UBPD | (UDH) Air blow amount adjustment valve home position sensor | Controls open/close of the valve to determine air quantity according to the document. (L: home position) |
| (70) | UPD1 | (UDH) Document transport roller section document sensor 1 | Detects that the document was fed and has reached the transport section. (H: Paper presence) |
| (71) | UPD3 | (UDH) Reversing preliminary paper feed position document sensor 3 | Detects that the document has reached the reversing preliminary paper feed position. (H: Paper presence) |
| (72) | UPD2 | (UDH) Preliminary paper feed position document sensor 2 | Detects that the document has reached the preliminary paper feed position. (H: Paper presence) |
| (73) | UDSW2 | (UDH) Document feed section cover open/close detection switch | The switch is connected to the paper feed motor (UFM) power line 38V. the 38V line is cut of when the paper feed section cover is opened. (OFF: paper feed section cover open) |
| (74) | UHFD | (UDH) manual paper fed section document sensor | Detects that a document is inserted into the manual paper feed section. (L: Paper presence) |
| (75) | UJRSW1 | (UDH) Document transport section JAM process detection switch | Opens/closes the UDH to process JAM in the transport section. The switch is provided at the same position as UDSW1. |
| (76) | UDSW1 | (UDH) Open/close detection switch | The switch is connected to the transport motor (UTM) power line 38V. When the UDH is opened, the 38V line is shut off. (OFF: UDH open) |
| (77) | FPPD | Finisher section transport sensor | Detects paper exit after passing the fuser section. |
| (78) | FPOD | Finisher section paper exit sensor | Detects paper exit from the finisher section. |
| (79) | FJPD | Finisher section staple paper sensor | Detects paper presence in the staple section. |
| (80) | FSTPD | Finisher section staple tray paper sensor | Detects paper presence in the staple tray in the finisher section. |
| (81) | FLSTS | Finisher section staple sensor | Detects staples in the staple unit (YES, NO). |

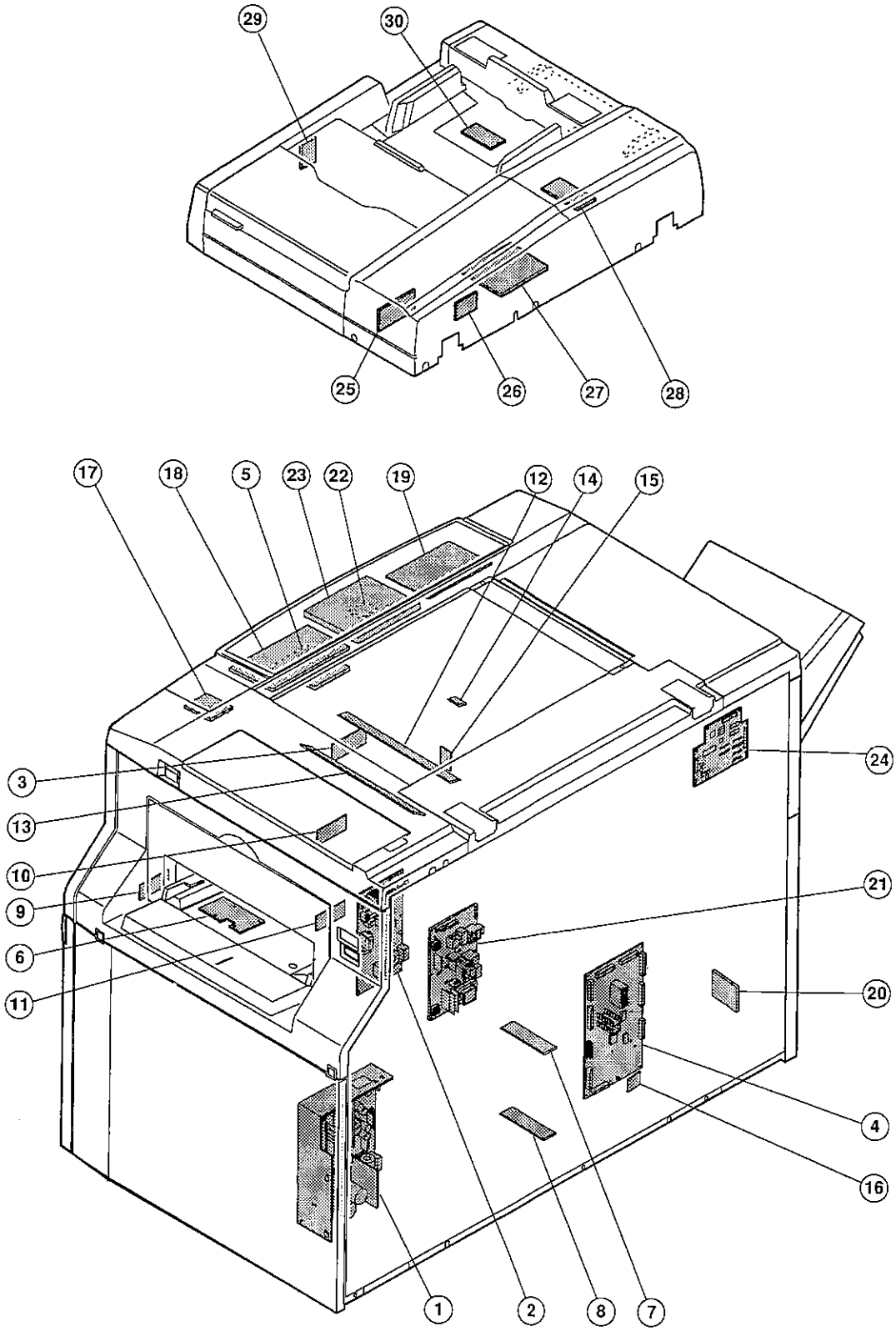
| | Signal name | Name | Function and operation |
|---|---|---|---|
| ㉜ | FSHPS | Finisher section staple home position sensor | Used to detect the staple operation home position. |
| ㉝ | FPHPS | Finisher section pusher home position sensor | Used to detect the pusher operation home position. |
| ㉞ | FPOHS | Finisher section pusher pushing sensor | Used to detect the pusher operation upper limit. |
| ㉟ | FEHD | Finisher section elevator home position sensor | Used to detect the elevator upper limit position. |
| ㊱ | FELS | Finisher section elevator lower position sensor | Used to detect paper full. |
| ㊲ | FJHS | Finisher section jogger home position sensor | Used to detect the jogger operation home position. |
| ㊳ | FOTHS | Finisher section offset tray home position sensor | Used to detect the offset tray shift home position. |
| ㊴ | FGHPS | Finisher section gate home position sensor | Used to detect the transport path select gate home position. |
| ㊵ | FTGHS | Finisher section offset tray home position sensor | Used to detect the offset tray guide home position. |
| ㊶ | FELLS | Finisher section elevator lower limit position sensor | Used to detect the elevator lower limit position. |
| ㊷ | FOTPD | Finisher section offset tray paper sensor | Used to detect paper presence/empty. |
| ㊸ | FLSW | Finisher section lock sensor | Used to detect installation of the finisher. |

## 6. Motors



| | Signal name | Name | Function and operation | Type |
|---|---|---|---|---|
| ① | MM | Main motor | Drives the main body. | DC brushless |
| ② | DM | Drum motor | Drives and rotates the photoconductor drum. | DC brushless |
| ③ | TBFM | Paper feed blower fan motor | Prevents against double paper feed | DC brushless |
| ④ | TVFM | Paper feed suction fan motor | Suction for paper transport | DC brushless |
| ⑤ | MIRM | Mirror motor | For mirror base scanning | DC brushless |
| ⑥ | LM | Lens motor | Shifts the lens base. | DC stepping |
| ⑦ | MBM | Mirror base motor | Shifts No. 4/5 mirror base. | DC stepping |
| ⑧ | DSBM | Duplex copy switchback motor | Paper transport direction selection | DC stepping |
| ⑨ | DBM | Duplex copy rear edge guide motor | Shifts the rear edge guide plate. | DC stepping |
| ⑩ | DWM | Duplex copy alignment plate motor | Shifts the alignment plate. | DC stepping |
| ⑪ | TM1 | Toner motor 1 | Supplies toner from the toner hopper to the developer unit. | DC synchronous |
| ⑫ | TM2 | Toner motor 2 | | |
| ⑬ | TLM1 | Tray lift motor 1 | Lifts 2000-sheet paper feed tray base plate. | DC brush |
| ⑭ | TLM2 | Tray lift motor 2 | Lifts 1000-sheet paper feed tray (upper) base plate. | DC brush |
| ⑮ | TLM3 | Tray lift motor 3 | Lifts 1000-sheet paper feed tray (lower) base plate. | DC brush |
| ⑯ | CFM1 | Cooling fan motor 1 | Cools the optical section. | DC brushless |
| ⑰ | CFM2 | Cooling fan motor 2 | | DC brushless |
| ⑱ | SFM | Suction fan motor | Suction for paper transport. | DC brushless |
| ⑲ | PFM | Process fan motor | Ventilation around the process unit | DC brushless |
| ⑳ | FFM | Fusing fan motor | Ventilation around the fuser unit | DC brushless |
| ㉑ | PSFM | Power supply fan motor | Ventilation around the power supply | DC brushless |
| ㉒ | VFM | Ventilation fan motor | Ventilation in the optics | DC brushless |
| ㉓ | UOM1 | (UDH) Document exit reverse motor | Used to drive the document exit reverse roller. | DC brushless |
| ㉔ | UTM | (UDH) Document transport motor | Used to drive the document transport belt. | DC brushless |
| ㉕ | UOM2 | (UDH) Moving unit document exit motor | Used to drive the document exit roller | DC brushless |
| ㉖ | UVFM | (UDH) Air suction fan motor | Used to suck a document on the tray to suck it on the transport suction belt. | DC brushless |
| ㉗ | UBVM | (UDH) Air blowing quantity control valve motor | The valve opening/closing is controlled by the stepping motor to adjust air quantity. | DC stepping |
| ㉘ | UFM | (UDH) Document feed motor | Used to drive the suction belt and the paper feed section roller. | DC brushless |
| ㉙ | UBFM | (UDH) Air blow fan motor | Used to blow air to multi documents to separate one to prevent against double feed. | DC brushless |
| ㉚ | FOTSM | (Finisher) Offset tray shift motor | Used to shift the tray back and forth to separate papers on the elevator tray. | DC brush |
| ㉛ | FORM1 | (Finisher) Paper exit motor 1 | Used to transport papers in the finisher. (Upper) | DC stepping |
| ㉜ | FORM2 | (Finisher) Paper exit motor 2 | Used to transport papers in the finisher.(Lower) | DC stepping |
| ㉝ | FJM | (Finisher) Jogger motor | Used to set the jogger position according to the paper size and to align papers on the staple tray. (For jogger drive) | DC stepping |
| ㉞ | FOTEM | (Finisher) Elevator motor | Used to drive the offset tray upwards and downwards. | DC stepping |
| ㉟ | FPM | (Finisher) Pusher motor | Used to drive the pusher to discharge papers on the staple tray. | DC stepping |
| ㊱ | FGM | (Finisher) Gate drive motor | Used to select the gate position for feeding papers from the duplicator body to the suitable transport path according to the specified mode. | DC stepping |
| ㊲ | FSM | (Finisher) Staple motor | Used to drive the staple unit. | DC brush |
| ㊳ | FTGM | (Finisher) Tray guide drive motor | Used to stop the offset tray guide at the position according to the specified mode. | DC stepping |

## 7. PWB unit list



| | Name | Country version | Remark |
|---|---|---|---|
| ① | DC power circuit PWB | 100V/200V | DC power supply |
| ② | AC power circuit PWB | Japan 15A/Japan 20A/ Overseas 100V/Overseas 200V | AC power input |
| ③ | Process control PWB | 100V/200V | |
| ④ | Main control PWB | Common | Main body control |
| ⑤ | Operation control PWB | Japan/SEEG/Overseas (※) | Operation input, display control (※)English, German, French |
| ⑥ | Manual feed paper size sensor PWB | Common | Paper size sensing |
| ⑦ | Paper feed tray size sensor PWB | Japan/Overseas AB/INCH | Paper size sensing |
| ⑧ | Paper feed tray size sensor PWB | Japan/Overseas AB/INCH | Paper size sensing |
| ⑨ | Paper feed tray switch PWB | Common | |
| ⑩ | Paper feed tray switch PWB | Common | |
| ⑪ | Paper feed tray switch PWB | Common | |
| ⑫ | Discharge lamp PWB | Common | Discharge lamp drive |
| ⑬ | Blank lamp PWB | Common | Blank lamp control |
| ⑭ | AE sensor PWB | Common | Original density automatic exposure sensing |
| ⑮ | Light quantity correction PWB | Common | Used for dirt correction |
| ⑯ | Option memory PWB | SD-3075/3076 common | For the Auditor |
| ⑰ | Commander I/O PWB | Common | For connection with the SF-EA13 |
| ⑱ | Operation PWB 1 | Common | Operation input, display |
| ⑲ | Operation PWB 2 | Common | Operation input, display |
| ⑳ | Paper feed tray motor PWB | 100V/200V | Paper feed tray lift motor protection circuit |
| ㉑ | High voltage unit PWB | 100V/200V | Process high voltage developer bias voltage supply |
| ㉒ | LCD display invertor PWB | Common | LCD display power source (for back light) |
| ㉓ | LCD unit PWB | Common | Display unit |
| ㉔ | Finisher control PWB | Japan, SEC, SECL, Others | Finisher control |
| ㉕ | Document transport motor (UTM) control PWB | Common | Document transport motor control |
| ㉖ | UDH power distribution PWB | Common | UDH circuit/load power distribution |
| ㉗ | UDH main control PWB | Common | UDH document feed/transport control |
| ㉘ | Document feed motor (UFM) control PWB | Common | Document feed motor control |
| ㉙ | Document length detecting PWB | Common | Document size detection |
| ㉚ | Document width detecting PWB | Common | Document size detection |

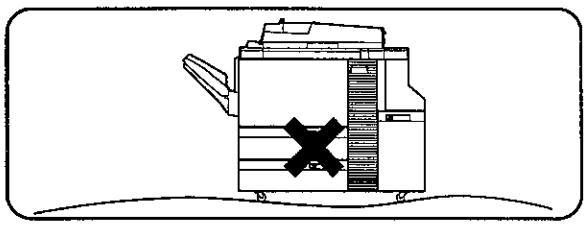
# [4] INSTALLATION AND TRANSPORT

## 1. Installation conditions

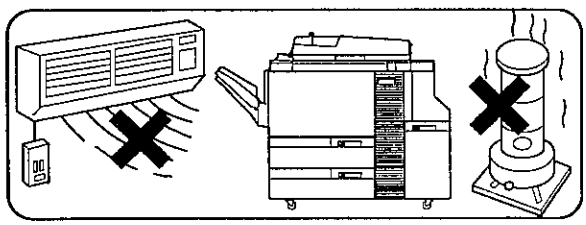
The performance of the copier is affected by the surrounding conditions of the installation site. Avoid installation in the following places:

- Avoid installation on an uneven floor, an unstable surface, or a slanted surface.
  To assure proper performance, the copier should be installed on a horizontal surface.

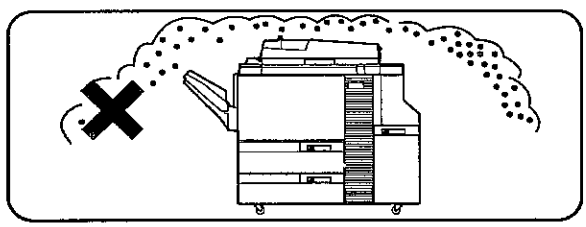
  * The installation surface should be stable enough to support the copier weight (main body: approx. 526 lbs ( 275 kg).



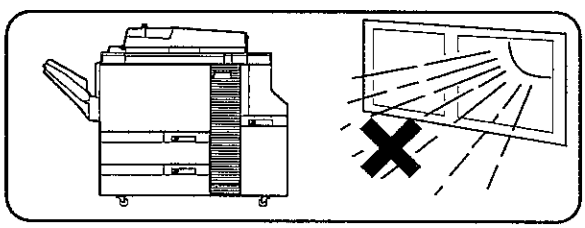
- Avoid installation where either the temperature or humidity is excessively high or low. (For example, near a stove, humidifier, or refridgerator.)
  This may dampen the paper or cause condensation within the copier, resulting in paper jams or poor copy quality.
  (Operating conditions: temperature 15°C - 30°C, humidity 20% - 85%)



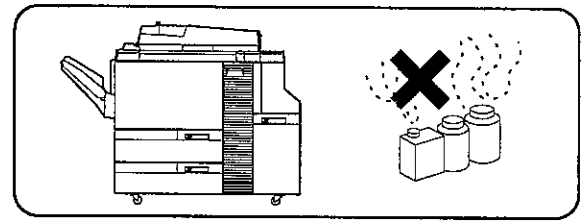
- Avoid installation in a dusty place.
  If dust enters the copier machine, it may cause poor copy quality or result in imroper performance.



- Avoid installation in direct sunlight.
  This may cause deformation or discoloration of the plastic components or result in poor copyquality.

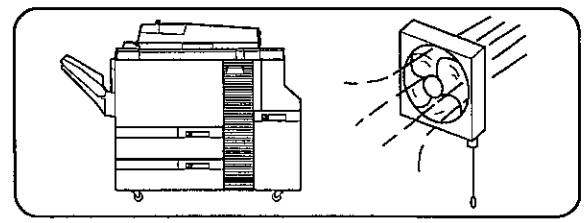


- Avoid installation where ammonia fumes are present.
  If the copier is installed near a diazo copier, it may cause poor copy quality.

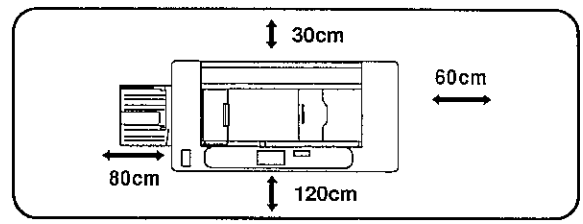


- Avoid installation in a poorly ventilated location.
  A small amount of ozone is produced within the copier during operation. The amount of ozone emmited by the copier is below the maximum emmision level allowed by the IEC (International Electrotechnical Commision) 950 Standard. The emission level is insufficient to cause any health hazard. However, since the small amount that is emitted may have an objectable odor, it is recommended to place the copier in a well ventilated room.

  * When installing the copier near a window, be careful not to expose it to direct sunlight.



- Avoid installation close to a wall
  Allow enough space around the copier to ensure proper operation. (For spacing requirements, refer to the figure below.



## 2. Transit and moving

When moving the SD-3062 body, carefully perform the following items.

### (1) Locking

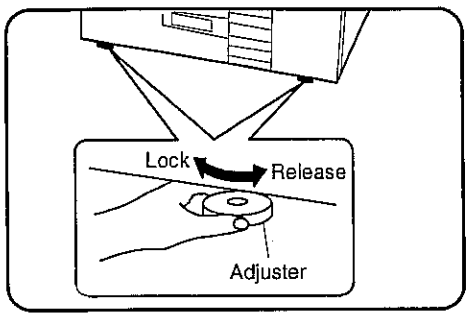
It is important that all shipping locks are installed when transporting the machine. If the shipping locks are not installed, the sub-assembly mechanisms may be affected by vibration during transportation.

- Optical system: Lens, Mirror base No.2/No.3, Mirror base No. 4/ No. 5
- Paper feed section: Each paper feed tray bottom plate
- Process section: Contact and separation of the cleaning blade

For the locking procedure, refer to the unpacking procedure.

### (2) Installation adjuster release

When moving the machine, be sure to release the installation adjusters.
IMPORTANT: AFTER MOVING AND INSTALLING THE SD-3062, TURN THE INSTALLATION ADJUSTERS UNTIL THEY REACH THE FLOOR TO STABILIZE THE MACHINE.




### (3) Transit and moving

When moving the machine within the same building, it is recommended to use a serviceman to ensure safe moving.

## 3. Power source

### (1) Power outlet and plug specifications check

A 20A dedicted line is recommended for proper operation. If the capacity is less than the rating (20A), advise the user to provide a new power line.

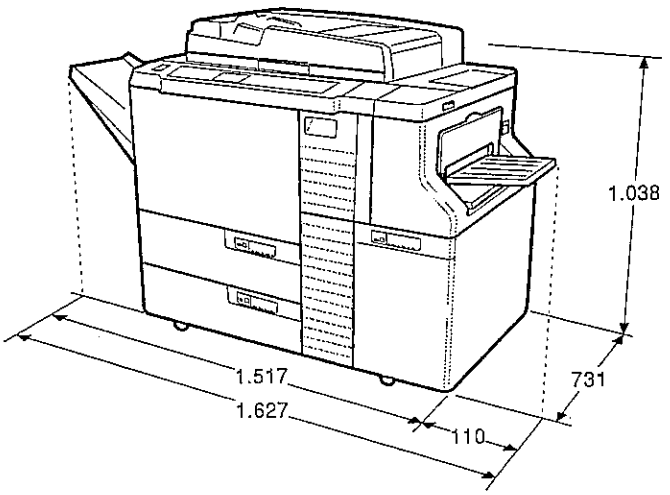
### (2) Destination setting

Set by simulation No. 26-06
If the machine is not set to the proper destination setting, the set time of the heater temperature- low temperature detection timer is shortened, causing H4 trouble. Be sure to set the machine according to its own specification.

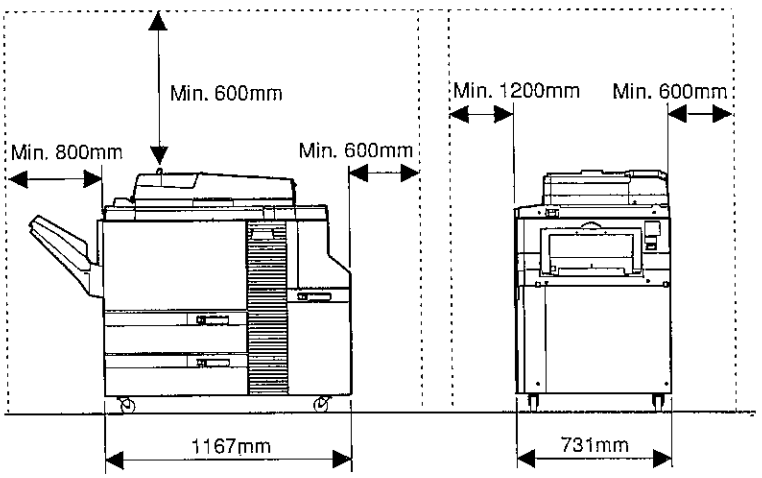
## 4. Installation space

The machine must be installed with ample space around it for assuring normal operations of all the functions. Proper space for servicing and maintenance is also required. (See next page)

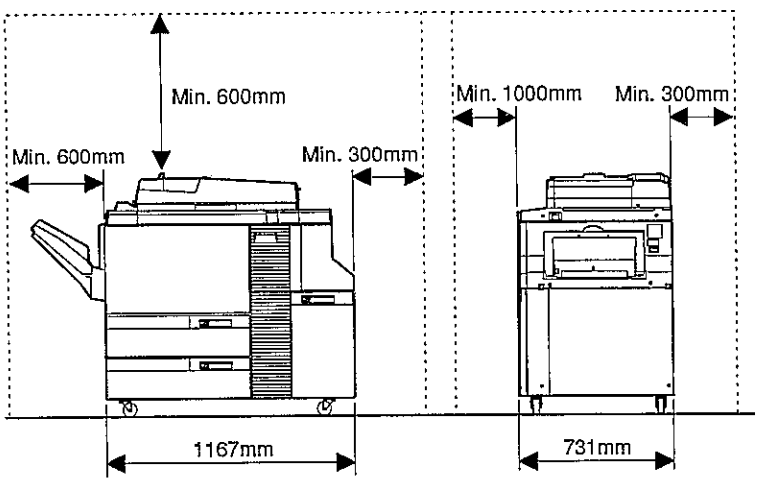
### (1) External dimensions




### (2) Installation (fixed)




### (3) Installation (movable)



# 5. Unpacking procedure

## (1) Unpacking procedure

① Cut the packing tape with scissors.

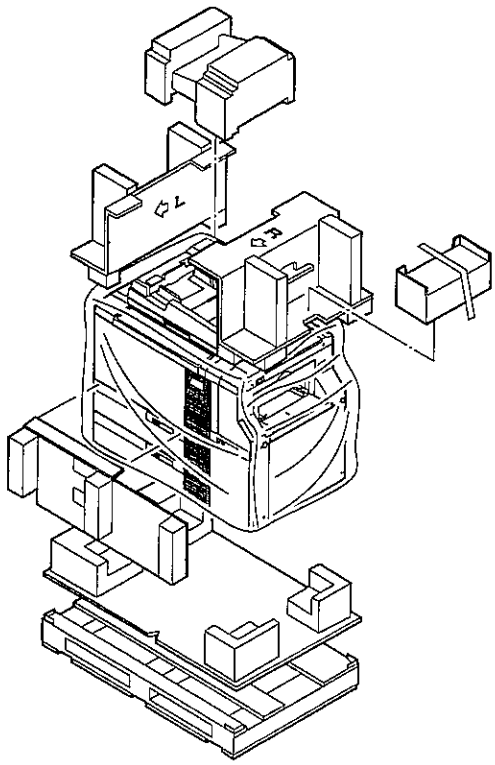
② Remove the packing material of upper carton.

③ Remove the upper carton cover.

④ Remove the body carton.

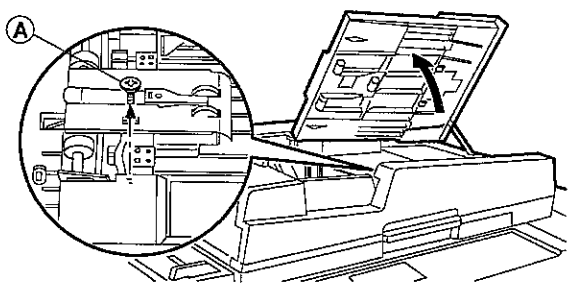
⑤ Remove the internal packing material.

⑥ Remove the packing material in the upper left of the SD-3062 body.



## (2) RDH fixing screw removal

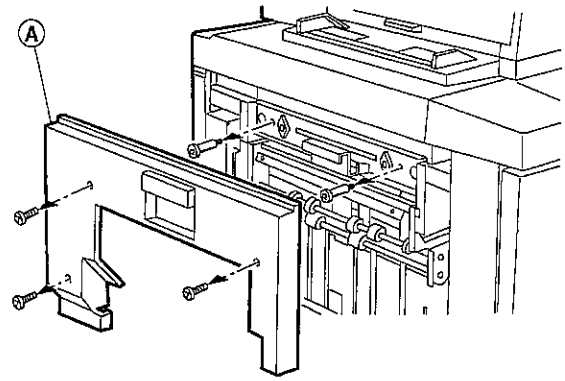
① Open the paper exit open/close unit and remove fixing screw Ⓐ.




## (3) Finisher unit fixing screw removal

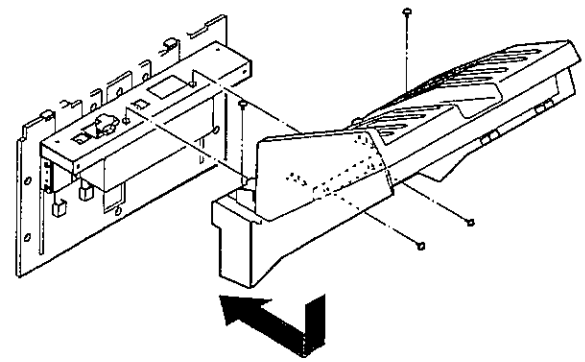
① Remove paper exit cover Ⓐ.

② Remove two fixing screws.




## (4) Paper exit offset tray unit installation

① Install the paper exit offset tray unit to the finisher. (4 screws)

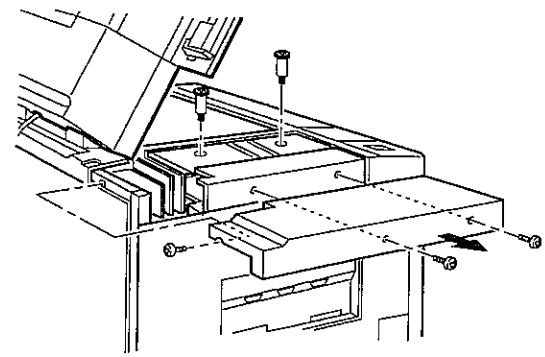


## (5) No. 2/No. 3 mirror base unit unlocking

① Remove the three fixings screws of the upper cabinet (Left), and remove the upper cabinet (Left).

② Remove two fixing screws of the No. 2/No. 3 mirror base unit.

③ Attach the upper cabinet (Left) with three fixings screws.

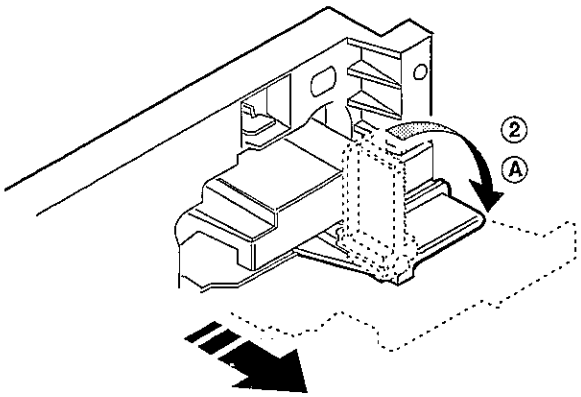


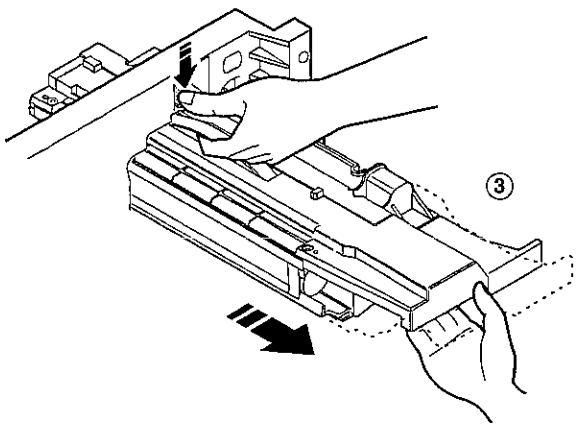
## (6) No. 4/No. 5 mirror base unit and lens unit unlocking

① Open the front cabinets (Left and Right).

② Put down the developer unit pressure lever to the right.

③ Hold the developer unit grip and pull it out. Hold the strap and keep pressing the developer unit lock release lever, and remove the developer unit from the main body.



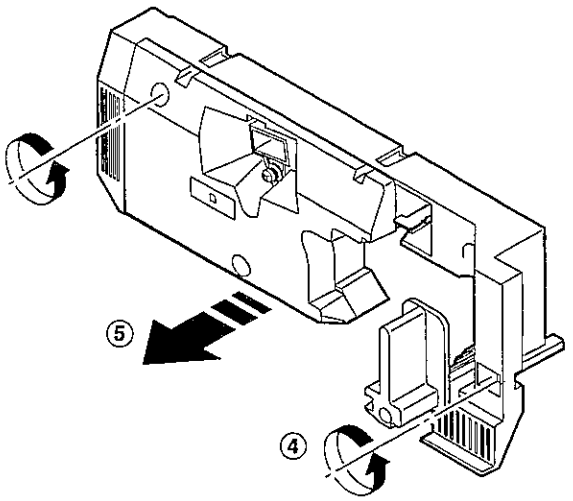



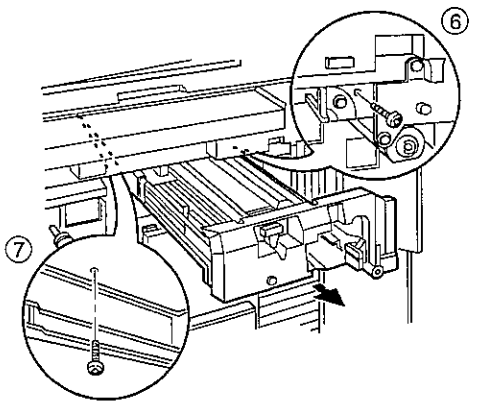

④ Turn the transport section open/close lever clockwise to release the pressured contact with the process unit.

⑤ Loosen two fixing screws of the process unit, and pull out the process unit.

⑥ Remove the fixing screw of the No. 4/No. 5 mirror base unit.

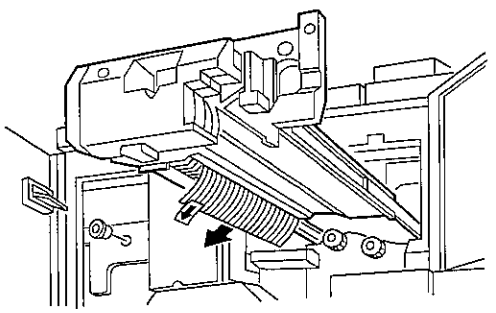
⑦ Remove the lens unit fixing screw.



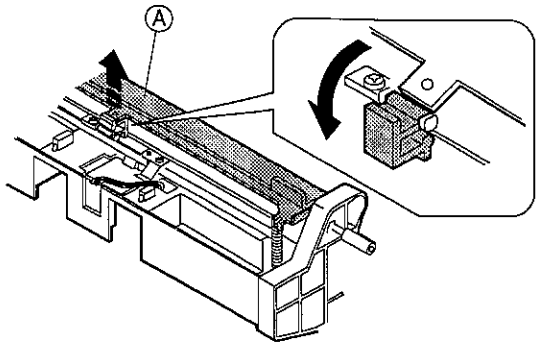

## (7) Photoconductor drum rotection sheet removal

① Slowly pull out the black protection sheet located inside the process unit.



## (8) Cleaning blade set-up

① Lift the cleaning blade mounting plate in the cleaner unit and flip the black cleaning blade lock down to the left.
With the above operation, the cleaning blade will properly contact the photoconductor drum surface.
If the picture quality adjustment is performed without the cleaning blade contacting the drum, a trouble code (F2-31,32, 33) will occur.



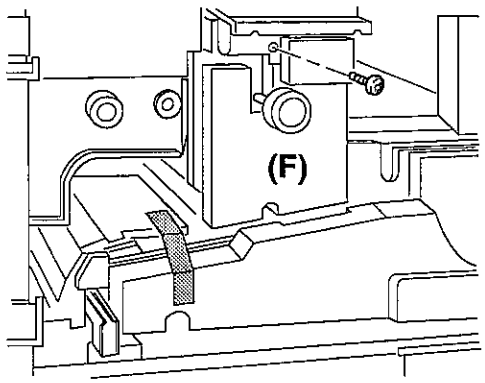

② Push the process unit into the body and fix it with two screws.

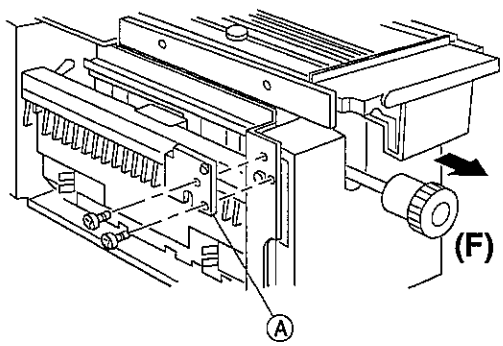
## (9) Fuser unit unlocking

① Remove the fuser unit fixing screw (1 pc.).

② Hold the fuser unit grip and pull it out.

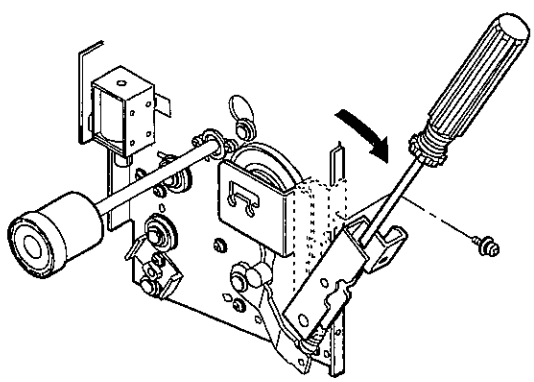
③ Remove two fixing screws of the paper guide fixing plate in the fuser unit paper exit side, and remove the paper guide fixing plate.



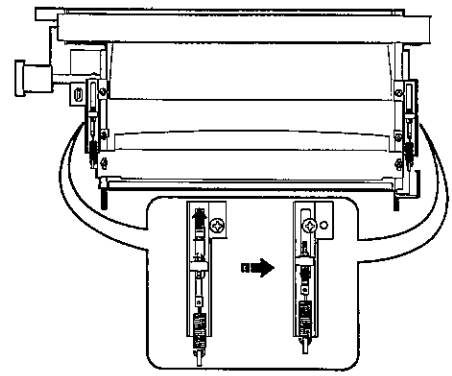

## (10) Fuser heat roller pressure setting

① Remove the fuser pressure lever fixing screw (Front) and tilt the fuser pressure lever.



② Remove the nut and the washer which are attached to the fuser pressure adjustment nut section in the fuser unit (F, R) for preventing looseness in transit.

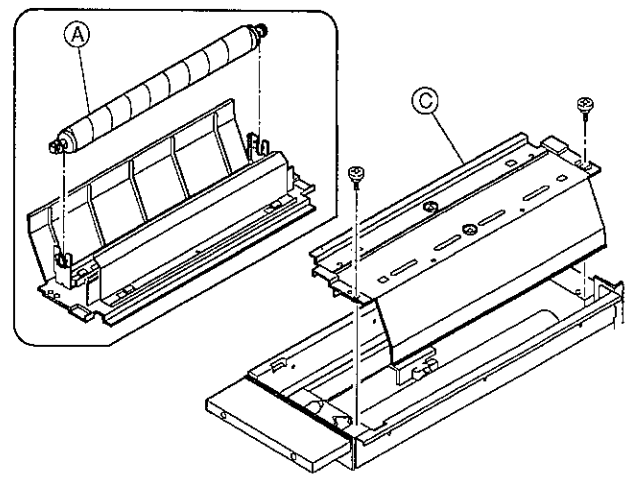
③ Tighten the fuser pressure adjustment nuts (F and R) until they stop.



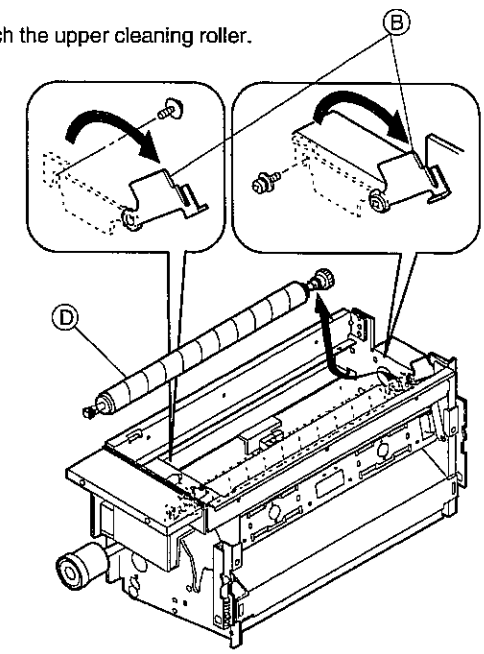
## (11) Fuser cleaning roller attachment

① Remove the cleaning rollers from the consumable parts unit packed together with the main body.

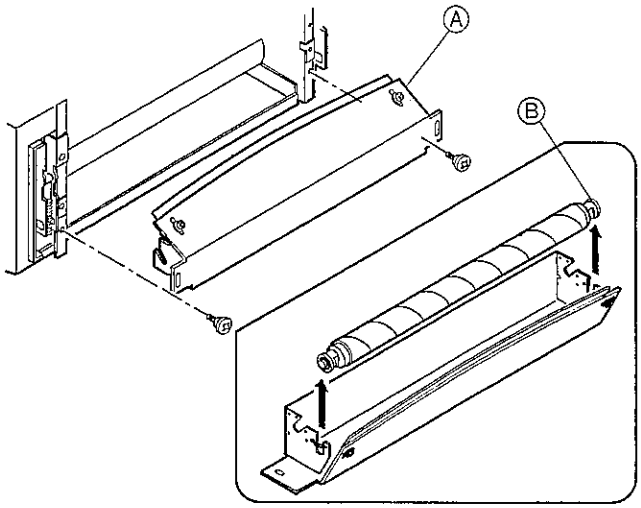
② Remove the fuser unit cover. (2 screws)



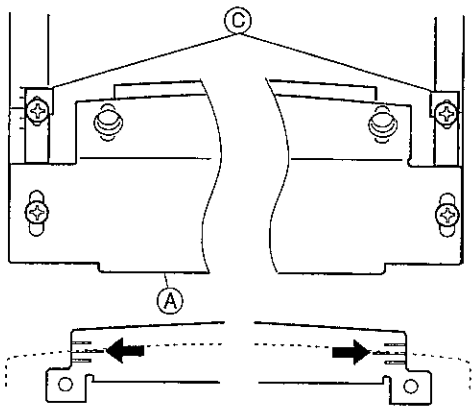

③ Attach the upper cleaning roller.




④ Remove the fuser paper guide. (2 screws)
Attach the lower cleaning roller to the fuser paper guide.



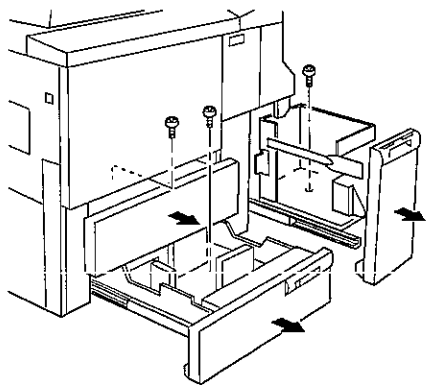

※ When attaching paper guide FA unit Ⓐ, push it until it makes contact with the lower edge of paper guide positioning plate Ⓒ, then fix it with screws. Use the center mark as the reference.)




## (12) Paper tray package fixing screw removal

① Pull out the paper feed tray unit.

② Remove the package fixing screw (1 pc. for each) of each paper feed tray bottom plate.



③ Set paper in each paper feed tray unit.
Since, however, the first tray is for a fixed size, the setting should be changed accordingly.

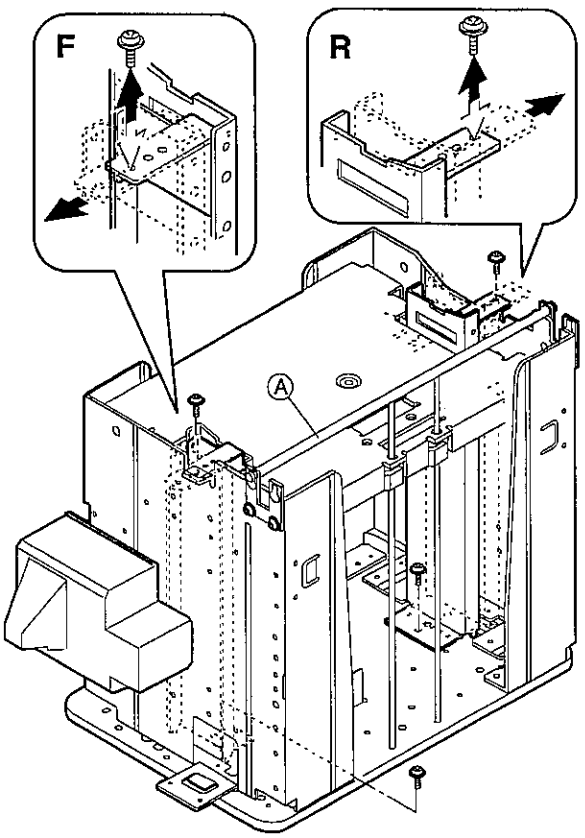
④ Push each paper feed tray into the body.

## (2000-sheet paper feed tray unit)

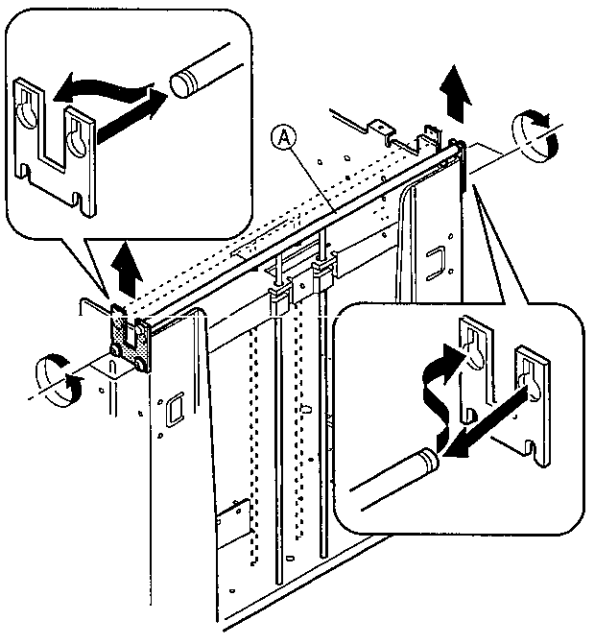
### (Paper size selection)

※ The BG shaft ass'y Ⓐ is used for A4 and A5 size only.

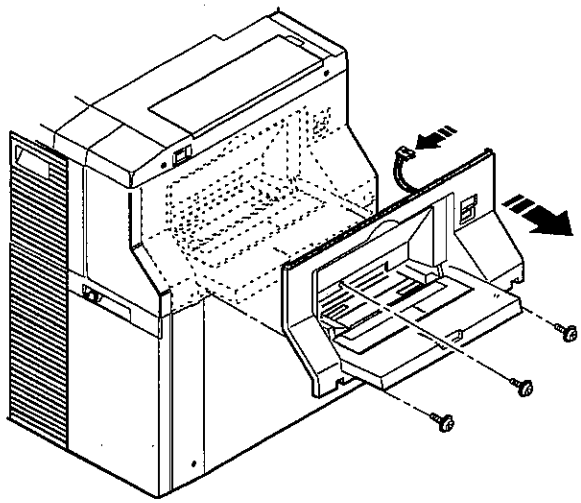
① Set the side guide F/R ass'y to the specified paper size.



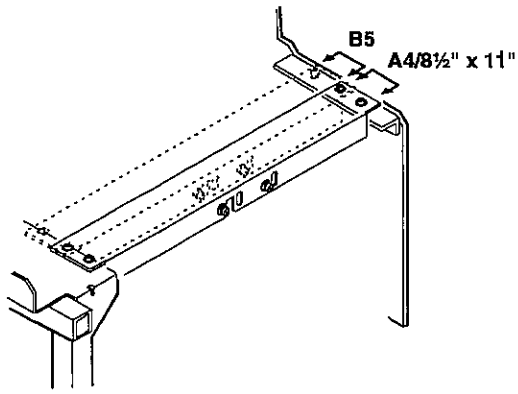

② Set the BG shaft ass'y Ⓐ to the specified paper size. (In the case of 8 1/2" x 11", remove the BG shaft.)



③ Remove the upper right cover/manual feed tray. (3 screws)

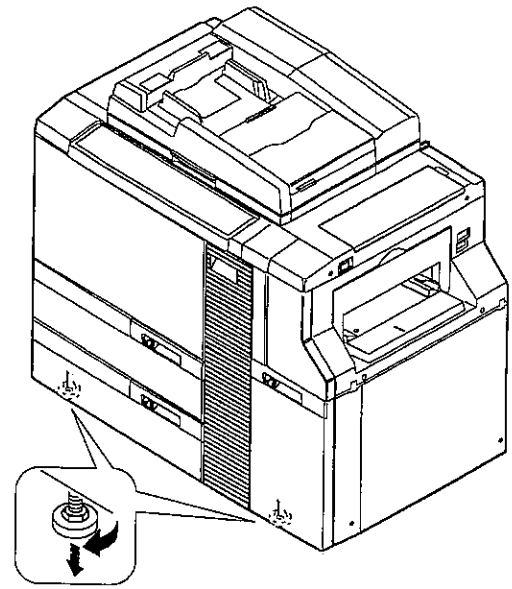


④ Set the paper feed tray rising sensor (TUD1) mounting plate to the specified paper size.




### (13) Duplicator installation adjuster fixing

① Fix the installation adjusters on the front side of the body in order to assure stable operation of the duplicator.
There are two installation adjusters (one on the right, one on the left) on the front frame side to fix the body.



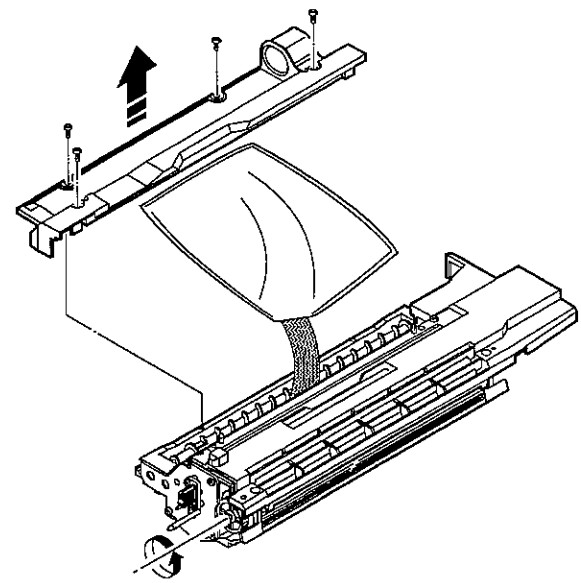
## 6. Installation and adjustment procedures

### (1) Developer supply

① Remove the toner transport section of the developer unit. (4 screws)

② Pour developer into the developer unit. (2 packs, 2kg)

③ Attach the toner transport section. (4 screws)



### (2) Toner initial density level registration (automatic developer adjustment)

① Insert the developer unit into the process unit and lock it into place by raising the developer unit pressure lever.

② Ensure that the process unit. transport unit, and fuser unit are properly installed.

③ CLose the front cabinet (L, R).

④ Connect the power cord he power outlet, and turn on the power switch.

⑤ Perform simulation 25-02.
The drum motor rotates to drive the developer unit for 3 minutes. After 3 minutes the initial toner density level is detected by the toner density sensor and registered in the memory in the main PWB.

[Note] When performing the automatic developer adjustment, check the following items in advance.

- Check that the cleaner blade is in contact with the drum.
- Check that each charger unit is installed.

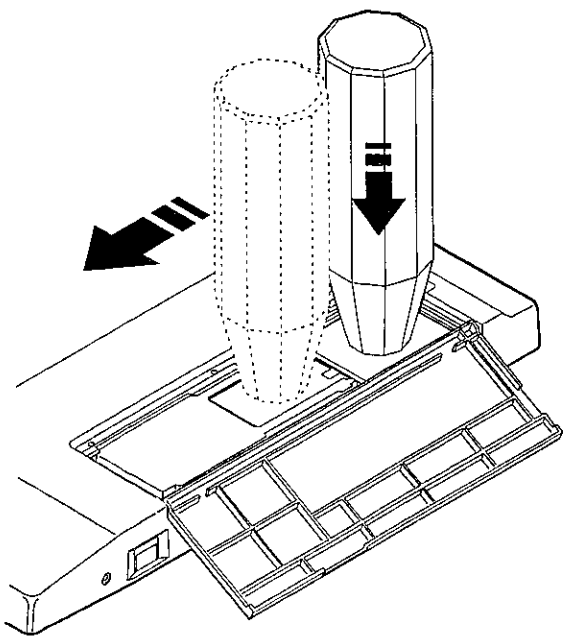
⑥ Cancel the simulation mode.

### (3) Toner supply

① Install toner after completion of the automatic developer adjustment. Shake the toner cartridge before installation.

② Set the toner cartridge on the toner hopper cover section and slide it forward.

③ Tap the toner cartridge sides to feed toner to the hopper.



④ Slide the toner cartridge to the rear and remove it.

### (4) Warmup

**<Photoconductor drum temperature>**

**The SD-3062 is equipped with a drum heater to stabilize the copy quality. When the power plug is connected to the power outlet, the drum reaches the stable temperature in about 15 minutes. Be sure to allow this time before performing the copy quality adjustment.**

### (5) Initial setting of the duplicator and the system

① Perform simulation 26 (Mode setting and check).

```
SIMULATION
NO.26
INPUT 1-8
1.OPTION SETUP
2.TRAY1 SIZE SETUP
3.AUDITOR SELECTION
4.(NO PROGRAM)
5.COUNTER MODE SETUP
6.DESTINATION SETUP
7.DRUM SENSITIVITY SETUP
8.TRAY PAPER ENPTY SENSE TIME SETTING
```

② Perform simulation 27 (RIC setting). Perform setting as required.

```
SIMULATION NO.27
INPUT 1-5
1.DISABLING OF U7-00 TROUBLE
2.PC/MODEM DATA CHANGE. : TEL#
3.PC/MODEM DATA CHANGE. : ID#
4.SERVICE START/END REPORT
5.TAG NUMBER SETTING
```

③ Perform simulation 20 and 21 (Maintenance counter clear and cycle setting).

④ Perform simulation 42 (Developer counter clear).

⑤ Perform simulation 24 (Counter clear).

### (6) Initial setting of process control

① Set the AE sensor gain level. (Simulation 47)

② Reset the membrane reduction counter. (Simulation 24-07)

③ Set the drum sensitivity. (Simulation 26-07)
(If the drum is installed when shipping from the factory, this setting is not required.)

④ Adjust the drum marking sensor output level. (Simulation 44-02)

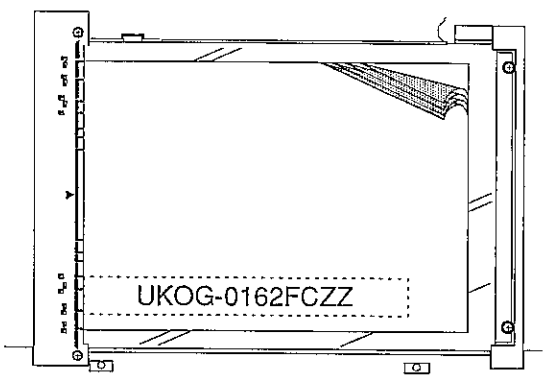
⑤ Adjust the process control sensor output level. (Simulation 44-03)

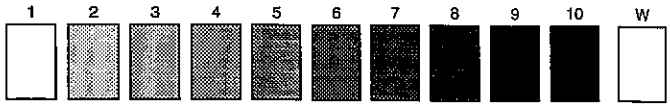
⑥ Check the process control reference value. (Simulation 44-04)
Reference value: 75 (Check that this value is set.)

⑦ Set the process control INHIBIT/ENABLE. (Simulation 44-01)
Standard value: 7

### (7) Initial copy quality adjustment procedure

① Test chart setting
Place several white sheets of paper (specified by Sharp) of about 120 mm wide and about 450 mm long or larger on the original table in the center reference.
Place a test chart (UKOG-0162FCZZ) as shown below:





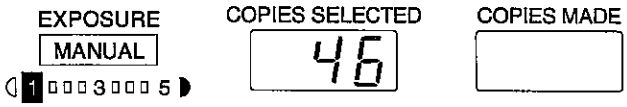

Test chart comparison table

| UKOG-0162FCZZ DENSITY No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | W |
|---|---|---|---|---|---|---|---|---|---|---|---|
| UKOG-0089CCZZ DENSITY No. | 0.1 | | 0.2 | | 0.3 | | | | 0.5 | 1.9 | 0 |
| KODAK GRAY SCALE | | 1 | | 2 | | 3 | | 4 | | 19 | A |

SHARP CORPRATION
MADE IN JAPAN

② Manual exposure mode adjustment
Perform simulation 46-01, and the following display will be given.

SIMULATION NO. 46
INPUT (450 - 800): NORMAL MODE
(TONER SAVE MODE: USE [→] KEY.)



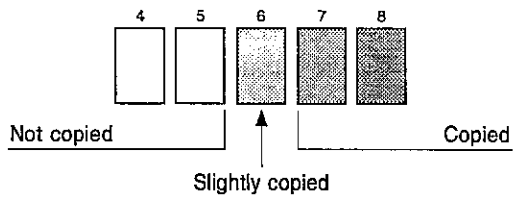

Check that the exposure display cursor shows "1."
If not, set to "1" with [◐] (LIGHT) key.

Make a copy.

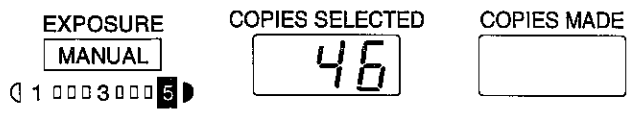
Check that "6" of UKOG-0162FCZZ is slightly copied and "5" is not copied. (In the case of UKOG-0089CSZZ, check that 0.5 is clearly copied and 03 is not copied.)

<When too light> Reduce the number displayed in the COPIES MADE display.

<When too dark> Increase the number displayed in the COPIES MADE display.




When the copy density is within the specified range, set to "5" with [◑] (DARK) key.



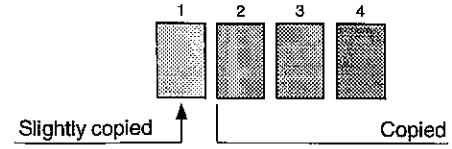

Check that the exposure display cursor shows "5."

Make a copy.

Check that "1" of UKOG-0162FCZZ is slightly copied and "W" is not copied. (In the case of UKOG-0089CSZZ, check that 0.1 is slightly copied and 0 is not copied.)

When too light Reduce the number displayed in the COPIES MADE display.

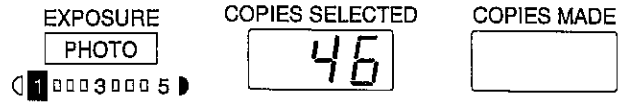
When too dark Increase the number displayed in the COPIES MADE display.




When the copy density is within the specified range, set to the photo mode with the exposure select key.

③ Photo mode adjustment

SIMULATION NO. 46
INPUT (450 - 800) PHOTO MODE
(TONER SAVE MODE: USE [-] KEY.)



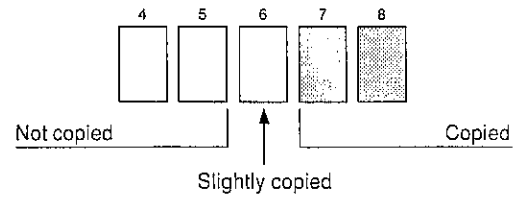

Check that the exposure display cursor shows "1."
If not, set to "1" with [◐] (LIGHT) key.

Make a copy.

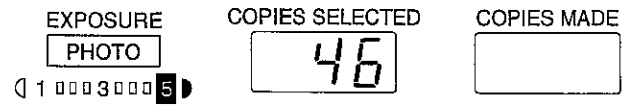
Check that "6" of UKOG-0162FCZZ is slightly copied and "5" is not copied. (In the case of UKOG-0089CSZZ, check that 0.5 is clearly copied and 03 is not copied.)

<When too light> Reduce the number displayed in the COPIES MADE display.

<When too dark> Increase the number displayed in the COPIES MADE display.




When the copy density is within the specified range, set to "5" with [◑] (DARK) key.



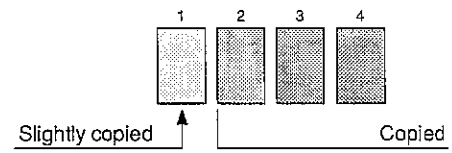

Check that the exposure display cursor shows "5."

Make a copy.

Check that "1" of UKOG-0162FCZZ is slightly copied and "W" is not copied. (In the case of UKOG-0089CSZZ, check that 0.1 is slightly copied and 0 is not copied.)

<When too light> Reduce the number displayed in the COPIES MADE display.

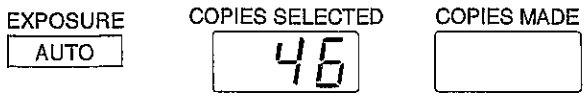
<When too dark> Increase the number displayed in the COPIES MADE display.




When the copy density is within the specified range, set to the automatic exposure mode with the exposure selection key.

④ Auto exposure mode adjustment

SIMULATION NO. 46
INPUT (450 - 800): NORMAL MODE
(TONER SAVE MODE: USE [→] KEY.)

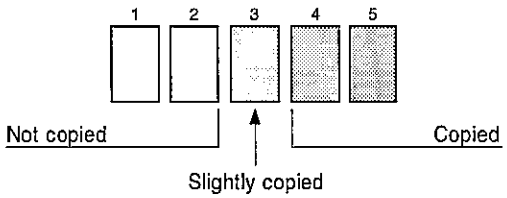



Make a copy.

Check that "3" of UKOG-0162FCZZ is slightly copied and "2" is not copied. (In the case of UKOG-0089CSZZ, check that 0.2 is clearly copied 0.1 is not copied.)

<When too light> Reduce the number displayed in the COPIES MADE display.

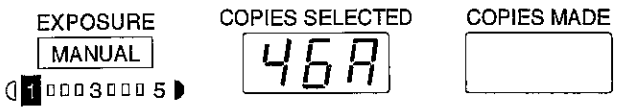
<When too dark> Increase the number displayed in the COPIES MADE display.




When the copy density is within the specified range, set to the manual exposure TSM mode with [→] key.

⑤ Manual exposure (TSM) mode adjustment

SIMULATION NO. 46
INPUT (450 - 800): TONER SAVE MODE
(NORMAL MODE: USE [→] KEY.)



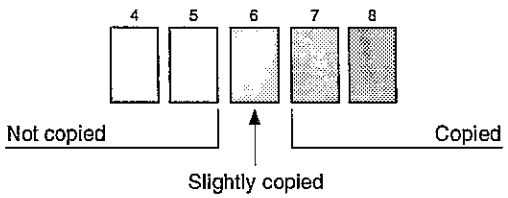

Check that the exposure display cursor shows "1."
If not, set to "1" with [◐] (LIGHT) key.

Make a copy.

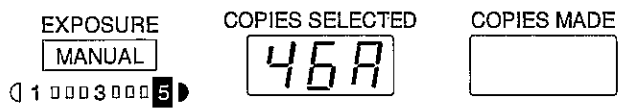
Check that "6" of UKOG-0162FCZZ is slightly copied and "5" is not copied. (In the case of UKOG-0089CSZZ, check that 0.5 is slighrly copied and 03 is not copied.)

When too light Reduce the number displayed in the COPIES MADE display.

When too dark Increase the number displayed in the COPIES MADE display.




When the copy density is within the specified range, set to "5" with [◑] (DARK) key.



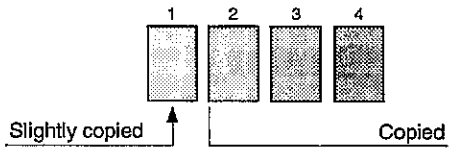

Check that the exposure display cursor shows "5."

Make a copy.

Check that "1" of UKOG-0162FCZZ is slightly copied and "W" is not copied. (In the case of UKOG-0089CSZZ, check that 0.5 is slightly copied and 03 is not copied.)

<When too light> Reduce the number displayed in the copied quantity display.

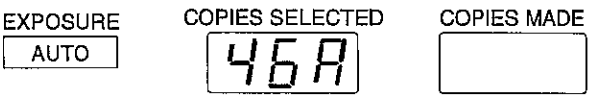
<When too dark> Increase the number displayed in the copied quantity display.




When the copy density is within the specified range, set to the auto exposure (TSM) mode with the exposure selection key.

⑥ Auto exposure (TSM) mode adjustment

SIMULATION NO. 46
INPUT (450 - 800): TONER SAVE MODE
(NORMAL MODE: USE [→] KEY.)

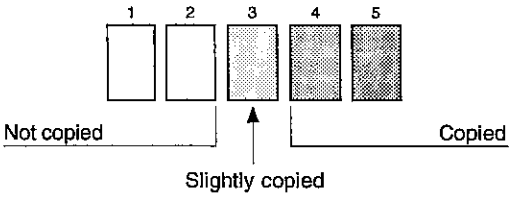



Make a copy.

Check that "3" of UKOG-0162FCZZ is slightly copied and "2" is not copied. (In the case of UKOG-0089CSZZ, check that 0.2 is slightly copied and 0.1 is not copied.)

<When too light> Reduce the number displayed in the copied quantity display.

<When too dark> Increase the number displayed in the copied quantity display.




When the copy density is within the specified range, the picture quality adjustment is completed.

## (8) Exposure adjustment procedure list

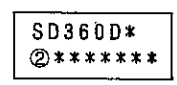
| Procedure | Adjustment item | Set level | UKOG-0162FCZZ copy | | |
|---|---|---|---|---|---|
| | | | Copied | Slightly copied | Not copied |
| 1 | Execution of simulation 46 (*) | | | | |
| 2 | Manual mode exposure adjustment | EXP.N-1 | 7 | 6 | 5 |
| | | EXP.N-5 | 2 | 1 | W |
| 3 | Photo mode exposure adjustment | EXP.P-1 | 7 | 6 | 5 |
| | | EXP.P-5 | 2 | 1 | W |
| 4 | N-AE mode exposure adjustment | N-AE | 4 | 3 | 2 |
| 6 | Switch to the save mode | | | | |
| 7 | Toner save mode exposure adjustment | EXP.T/S-1 | 7 | 6 | 5 |
| | | EXP.T/S-5 | 2 | 1 | W |
| 8 | T/S-AE mode exposure adjustment | T/S-AE | 4 | 3 | 2 |
| 9 | Completion of exposure adjustment | | | | |

※ Since the machine enters the process control mode immediately after execution of simulation 46, the copy lamp will light for several seconds.

## (9) SD-3062 SET-UP CHECKLIST

Upon setting up the copier, be sure to perform the following checks to ensure that all systems within the copier are functioning properly prior to on-site installation.

### Set-Up Test Commands

| Test Command | Description | Setting |
|---|---|---|
| 21-01 | Maintenance Cycle Setting | 1. 125K<br>2. 250K<br>3. NONE |
| 26-01 | Option Setting | 1. FINISHER/NO SORTER<br>2. NO FINISHER/NO SORTER<br>3. SORTER/STAPLE SORTER |
| 26-02 | Tray 1 Size Setting | 1. 8.5 x 11<br>2. A4<br>3. B5 |
| 26-03 | Auditor Mode Setting | 01. P10 (500)<br>02. P10 (3100)<br>03. SF_EA11<br>04. OTHER |
| 26-05 | Counter Mode Setting | TOTAL COUNT MAINTE COUNT<br>0 DOUBLE COUNT DOUBLE COUNT<br>1 SINGLE COUNT DOUBLE COUNT<br>2 DOUBLE COUNT SINGLE COUNT<br>3 SINGLE COUNT SINGLE COUNT |
| 26-06 | Destination Setting | [INCH]<br>1. SEC 2. SECL 3. OTHER<br>[AB(B5)]<br>4. JAPAN 15A 5. JAPAN 20A<br>[AB(A5)]<br>6. SEEG 7. SUK 8. SCA 9.OTHER |
| 26-07 | Drum Sensitivity Setting<br>(When install the new drum) | The set value is indicated at the top digit of the label attached to the inside of the drum.<br>  |

### Copy Image Checks

Use the C-3 Test Chart (UKOG-0121FCZ3) to perform the following checks copy checks. If adjustment is required, perform the procedure found on the reference page.

| Check | Specification | Test Command | Reference |
|---|---|---|---|
| Vertical Magnification Ratio | 100% +/-1% | 48-01 | pg. 6-6 |
| Horizontal Magnification Ratio | 100% +/-1% | 48-02 | pg. 6-7 |
| Focus | 5.0 lines/mm in center,<br>4.5 lines/mm in comers. | 48-01 | pg. 6-6 |
| Lead Edge Registration | 0 -3 mm | 50-02 | pg. 6-12 |

## Copy Quality Checks

Place a Sharp Gray Chart (UKOG-0162FCZZ) on the table glass and make copies in all copy modes (AE, Manual, and Photo). If the copies do not meet specification, perform the Copy Quality adjustment Procedure found in the service manual.

| Check | Setting Method |
|---|---|
| Auto Exposure Density | Key Operator Code 20 - set to "3. Normal". |
| AE Sensor Characteristics | Test Command 47 |
| Drum Sensitivity Setting | Test Command 26-07 |

| Test Command 46 | Specification |
|---|---|
| Manual Exp. 1 | 5 not copied, 6 slightly copied |
| Manual Exp. 5 | W not copied, 1 slightly copied |
| Photo Exp. 1 | 5 not copied, 6 slightly copied |
| Photo Exp. 5 | W not copied, 1 slightly copied |
| Auto Exp. (Normal) | 2 not copied, 3 slightly copied |
| Toner Save Exp. 1 | 5 not copied, 6 slightly copied |
| Toner Save Exp. 5 | W not copied, 1 slightly copied |
| Auto Exp. (TSM) | 2 not copied, 3 slightly copied |

## Operational Checks

Place the (UKOG-0121FCZ3)Test Chart on the table glass and make several copies from each feed station. Ensure that all feed areas are working properly. Place originals in the UDH and select one of the duplex copy modes. Select the STAPLE mode and program 20 into the copy quantity display window. Ensure that the job is completed without any malfunctions occurring. Ensure that all features and options operate correctly. If a problem is encountered, repair the problem and run the job again.

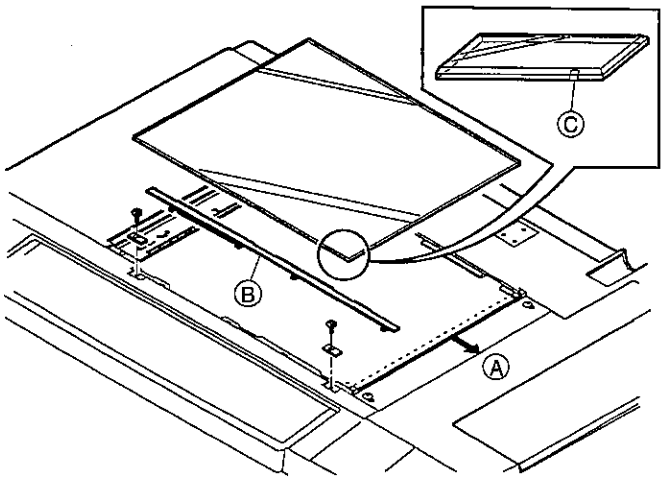
# [5] DISASSEMBLY AND ASSEMBLY

## 1. Optical unit

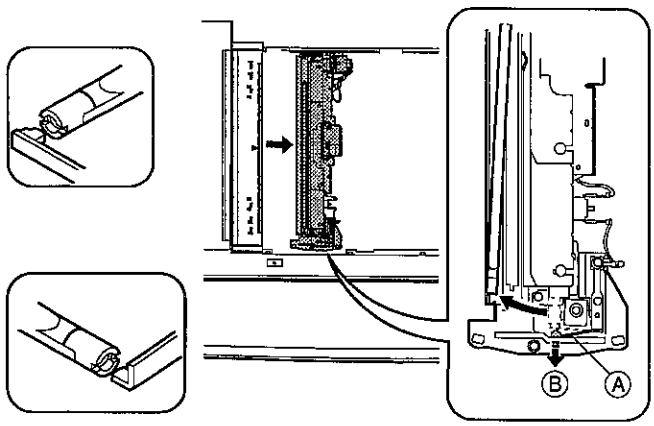
### (1) Copy lamp

① Loosen the two fixing screws Ⓐ of the table glass holding plate, slide the holding plate to the paper feed side, and remove the table glass.

② Remove the two UDH magnet catch plates.
Remove the operation cabinet Ⓑ.
When attaching the table glass, position the white mark Ⓒ in the right front side. The surface of the table glass is coated to suppress static electricity.

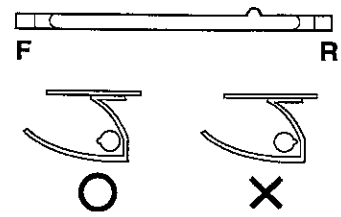



③ Move the copy lamp unit to the notch (in the front frame side) of the glass holding plate.
Push the copy lamp electrode Ⓐ on the front frame side in the direction of arrow Ⓑ and remove the copy lamp.




**Note:**

- Do not move the light adjustment plate.
- Do not touch the lamp surface with bare hands.
- Check that the electrode is securely in the groove of the copy lamp.
- Be careful of the installing direction of the copy lamp.




Attache so that the projected section of the copy lamp comes near the R side as shown above

### (2) Copy lamp unit, No. 1 mirror base

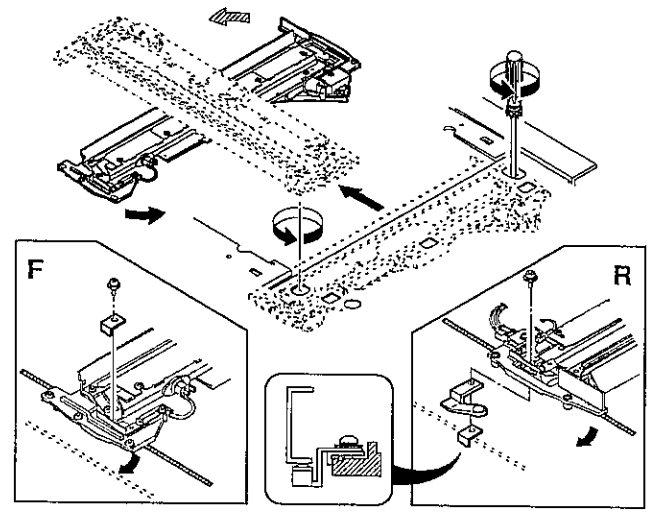
Perform the above procedures ① and ②.

③ Move the copy lamp unit to the notch at the paper feed side.

④ Remove the No. 1 mirror base wire fixing plate (F/R) fixing screws.

⑤ Remove the copy lamp unit from the No. 1 mirror base.

⑥ Remove the No. 1 mirror base from the mirror base drive wire.

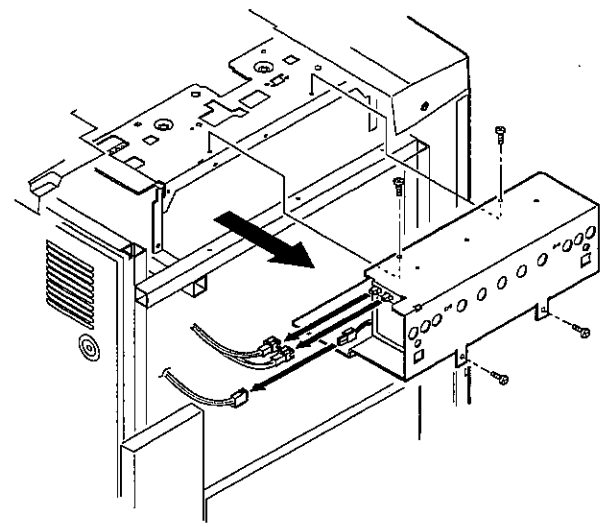



### (3) No. 2, No. 3 mirror base unit

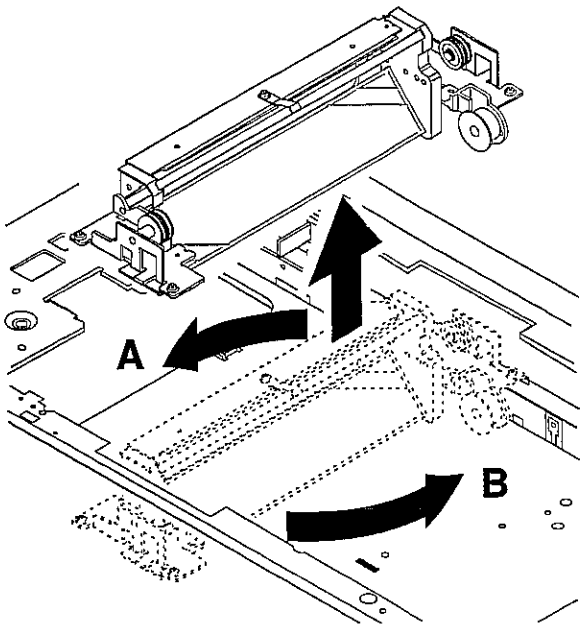
Perform the above procedure (2).

⑦ Remove the paper exit side cabinets. (3 screws)

⑧ Remove the cooling fan mounting unit. (4 screws, 3 connectors)



⑪ Disengage the mirror base wire (F/R) spring hook section, and remove the mirror base drive wire from the No. 2 and No. 3 mirror base unit pulley section. To remove, rotate the No. 2 and No. 3 mirror base unit 90 degrees (A ⇔ B).



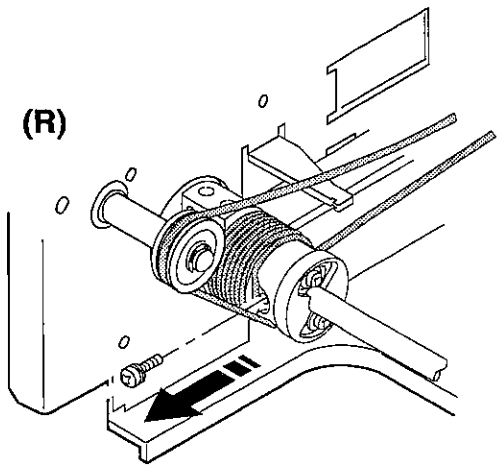

## (4) Mirror base drive wire

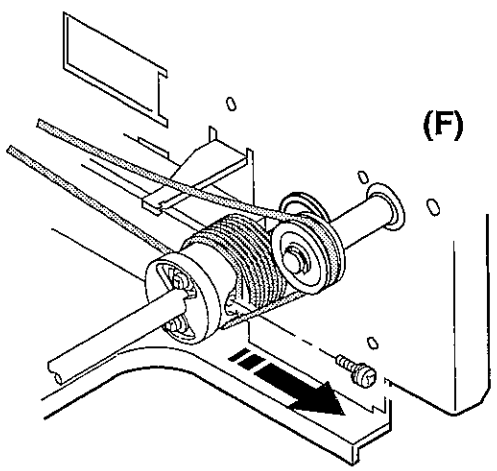
Perform the above procedure (3).

⑫ Remove the mirror base drive wire from the winding pulley (F/R). (2 screws)

⑬ Loosen the wire tension adjustment angle (F/R) screw.

⑭ Remove the wire hook section from the wire tension adjustment angle.

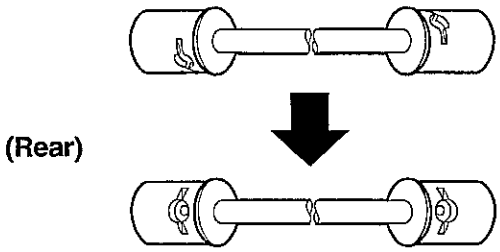


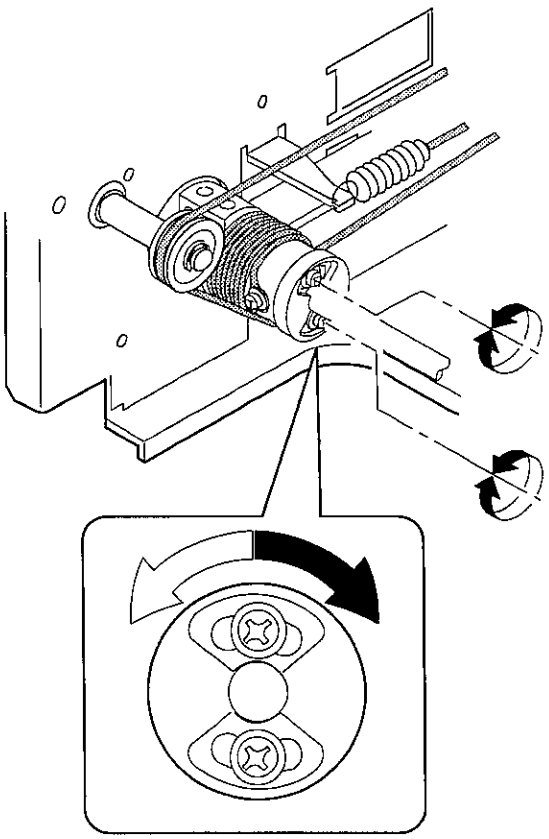

### Mirror base wire installation

(Preliminary check items)

- Check the stop position of the wire winding pulley.
  Check that the wire groove in the wire winding pulley (F) is at the same position with the wire groove in the winding pulley (R).




- Check that the tightening screws (2 each in the front and the rear) of the pulley flange and the wire winding pulley side are at the center of the pulley flange groove. If there is considerable shift in the position, loosen the two flange fixing screws to satisfy the above condition, and tighten the two screws.



① Hang the mirror base drive wire fixture on the tension adjustment plate hook.

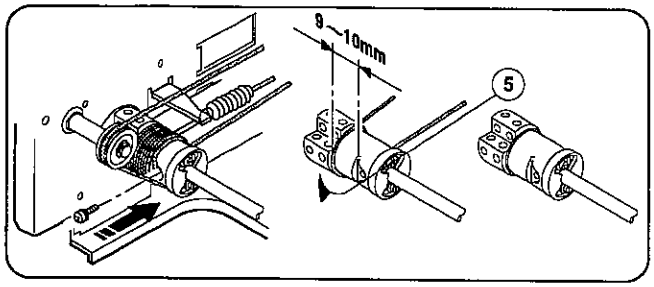
② Position the No.2/No.3 mirror base in contact with the mirror base positioning plate. Pass the front and the rear mirror drive wires along the groove outside the No. 2/No. 3 mirror base pulley.

③ Pass the No. 2/No. 3 mirror base wire along the groove in the paper feed side pulley.

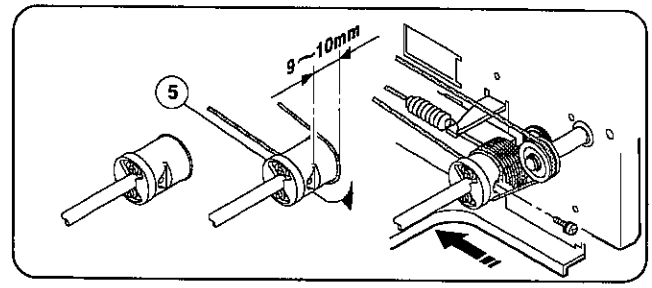
④ Pass the mirror base wire under the No. 2/No. 3 mirror base.

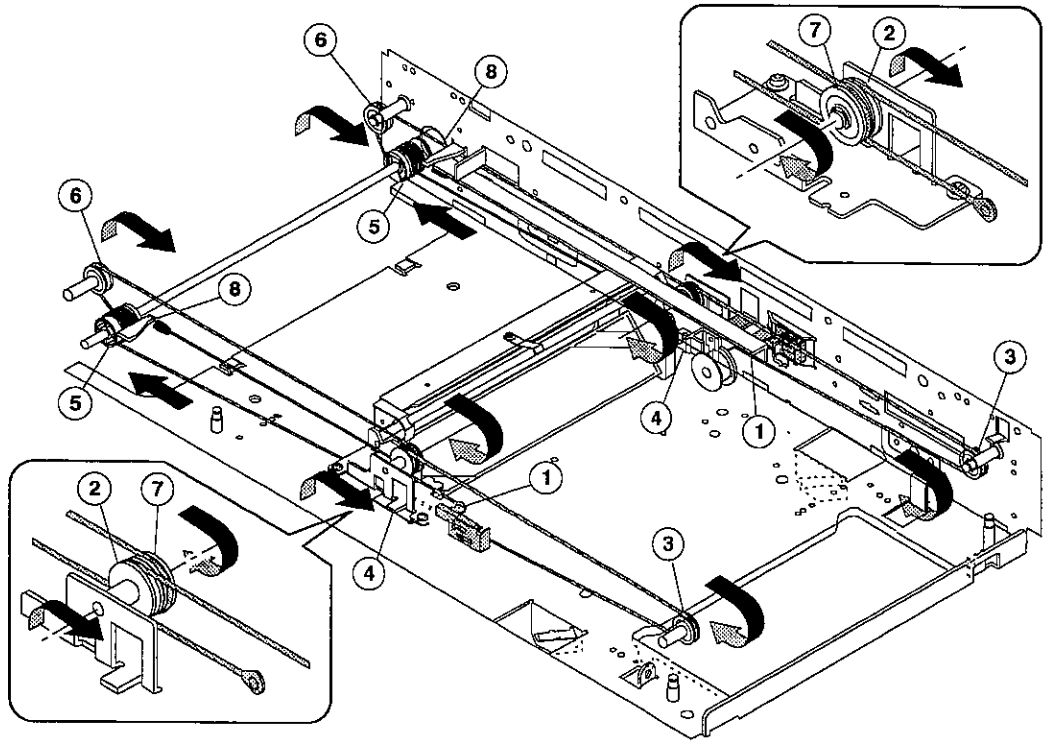
⑤ Wind the mirror base wire around the winding pulley.
In this case, fix the wire groove in the winding pulley to the upper position, wind the mirror base drive wire 8 turns around the pulley and put the beginning of 9th turn into the groove.

When viewed from front frame




When viewed from rear frame



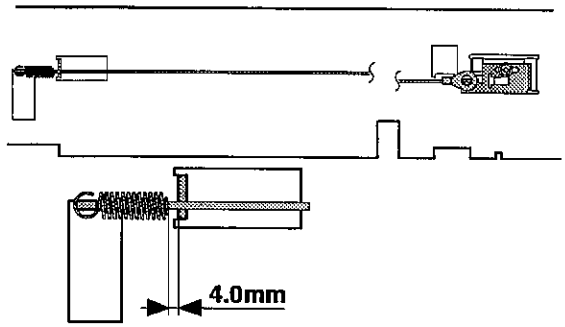

## Mirror base wire tension setting

① Manually rotate the mirror base drive pulley to shift the No. 2/No. 3 mirror base to the mirror base positioning plate.

② Rotate the mirror base drive wire tension adjustment screw clockwise to increase its tension until the wire spring edge comes in contact with the body frame projection.

③ Manually rotate the mirror base pulley to make a few full scans of the No. 2/No. 3 mirror base and check that the mirror base drive wire spring edge is in contact with the main body frame projection. If they are not in contact with each other, rotate the tension adjustment screw to adjust again. In this case, check also that the wire over the mirror base pulley is not weighted.

④ Rotate the mirror base wire tension adjustment screw 6 turns counterclockwise. (The distance between the mirror base wire spring and the main body frame projection will be about 4mm.)




(Repeat the same procedure for the front frame side and the rear frame side.)

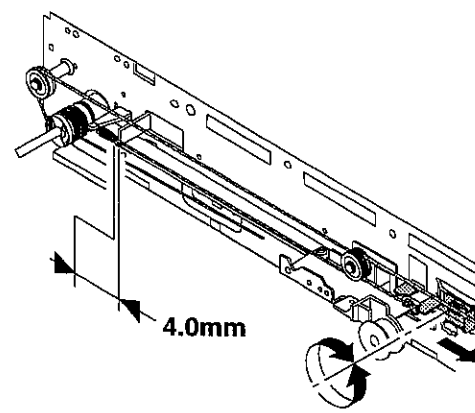
The first winding position of the mirror base drive wire is 9 - 10 mm from the pulley groove toward the main frame side.

⑤ Pass the mirror base drive wire along the paper exit side pulley groove.

⑥ Pass the mirror base wire along the internal groove of the No. 2/No. 3 mirror base pulley

⑦ Pass the mirror base drive wire through the wire guide.

⑧ Hang the mirror base drive wire tension spring on the projection in the optical base plate.

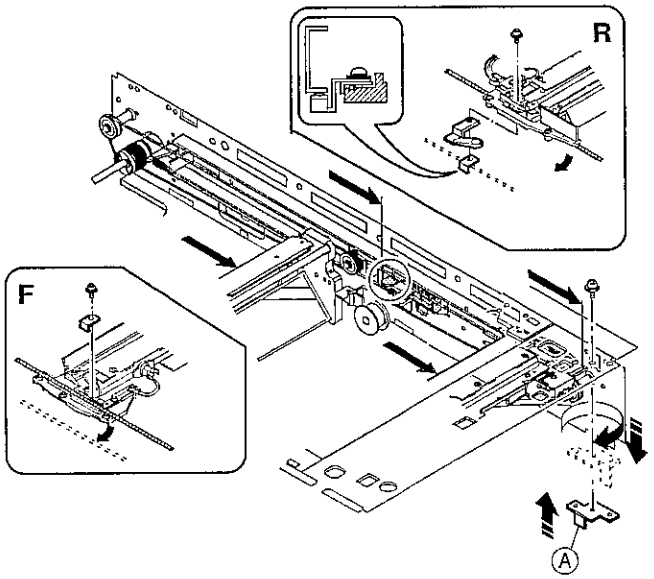


## Copy lamp unit installing position

① Pass the front/rear mirror base drive wires between the copy lamp unit frame and the wire fixing plate.
In this case, do not tighten the wire fixing screw.

② Remove the front/rear frame positioning plate fixing screw (1 pc.), rotate the positioning plate, and fix it with the screw again.

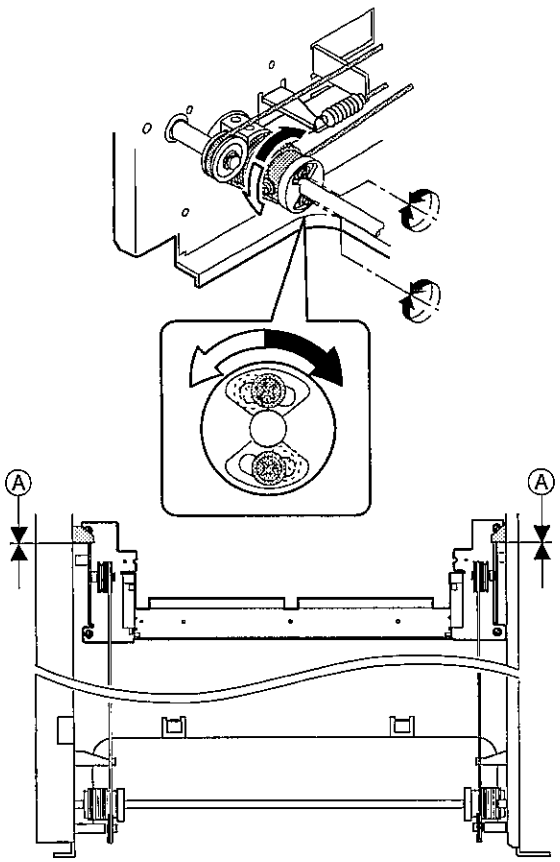
③ Push the copy lamp unit until it contacts surface A of the positioning plate, then tighten the wire fixing screw.




## No. 2/No. 3 mirror base unit installing position

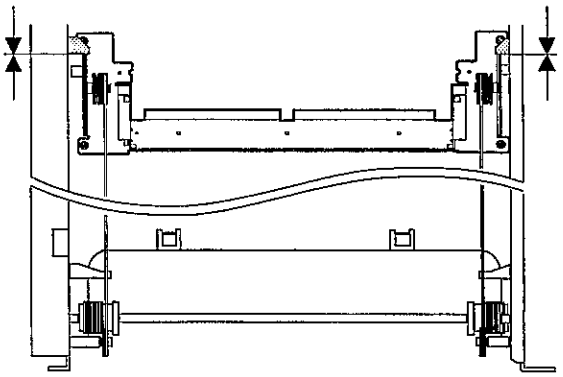
This is to adjust the parallelism of the No. 2/No. 3 mirror base to the drum surface and the original.

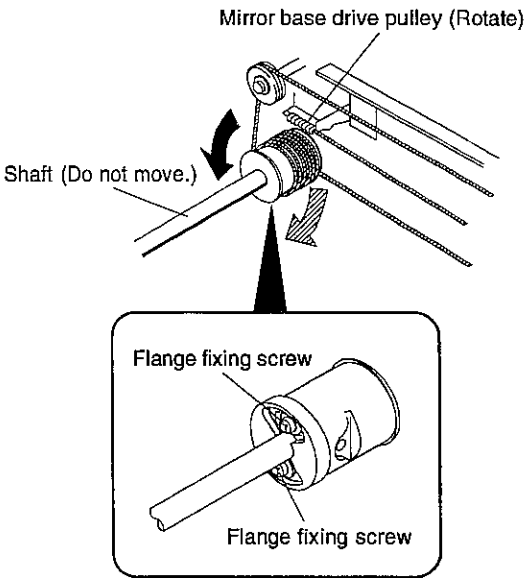
① Manually rotate the mirror base drive pulley to bring the No. 2/No. 3 mirror base into contact with the mirror base positioning plates.
In this case, if the front frame and the rear frame of the No. 2/No. 3 mirror base make contact with the mirror base positioning plates simultaneously, the No. 2/No. 3 mirror base parallelism is properlt set and there is no need for adjustment.




② Loosen the flange fixing screws on the side where the No. 2/No. 3 mirror base is not in contact with the mirror base positioning plate.

③ Manually rotate the mirror base drive pulley on the side where the No. 2/No. 3 mirror base is not in contact with the mirror base positioning plate until the No. 2/No. 3 mirror base comes in contact with the mirror base positioning plate.





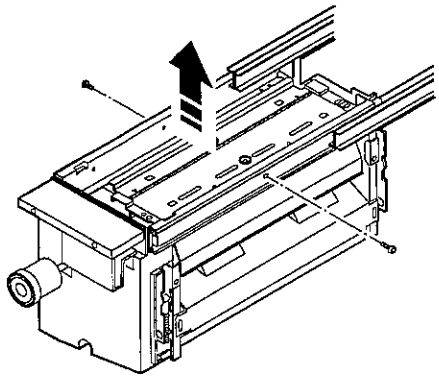

④ Tighten the flange fixing screw.

⑤ Manually rotate the mirror base drive pulley to separate the No. 2/No. 3 mirror base from the mirror base positioning plate once, and then bring them in contact with each other again.
In this case, check that the front frame side and the rear frame side of the No. 2/No. 3 mirror base make contact with the plates simultaneously.

⑥ If the condition in ⑤ is not satisfied, repeat procedures ② through ⑤ until it is satisfied.

## 2. Fuser section

- Slide out and remove the fuser unit from the main body. (2 screws) (For normal maintenance, there is no need to remove the fuser unit.)

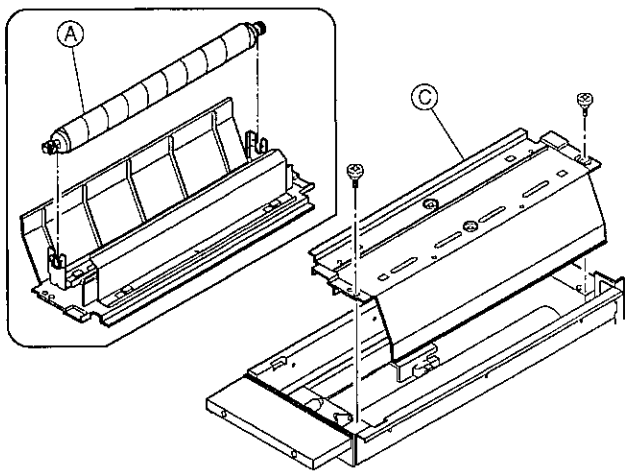


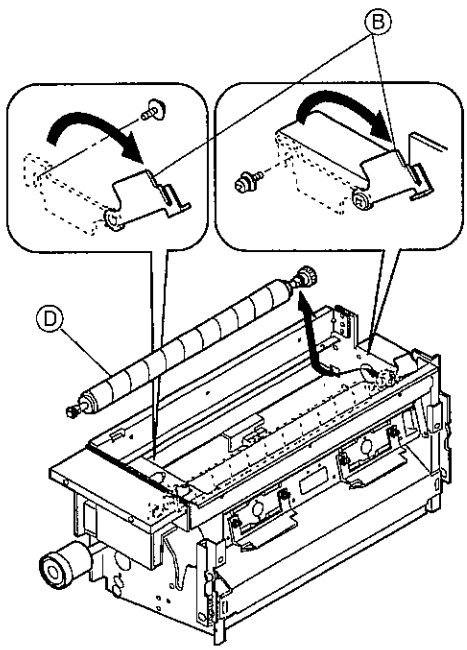
### (1) Upper cleaning roller

① Remove the fuser cover unit Ⓐ from the fuser unit. (2 screws)

② Slide the upper CL rotation stop plate Ⓑ in F and R. (Loosen two blue screws.)

③ Remove the upper cleaning roller.

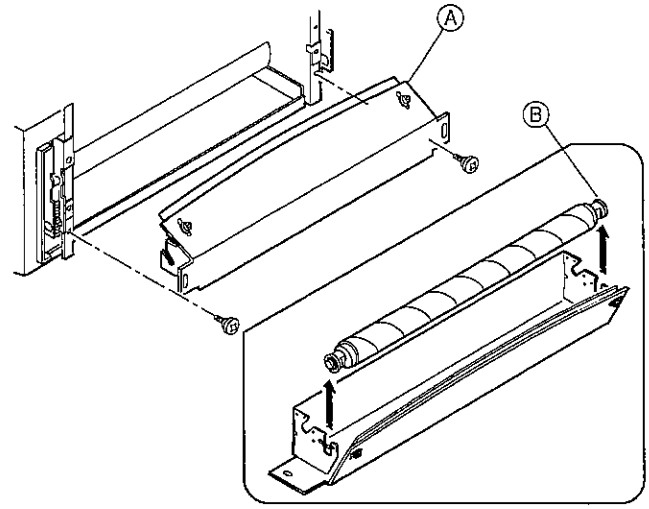



### (2) Lower cleaning roller, sub-cleaning roller

① Remove the paper guide FA unit Ⓐ from the fuser unit. (2 blue screws)

② Remove the lower cleaning roller Ⓑ.

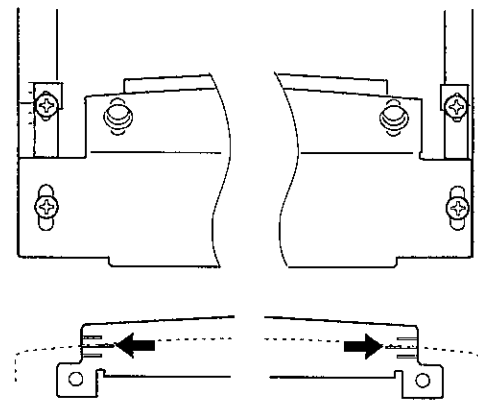



※ Put the black mark of the lower cleaning roller edge in the front side.

※ Be careful not to scratch the paper pass surface of the paper guide which is teflon-coated.

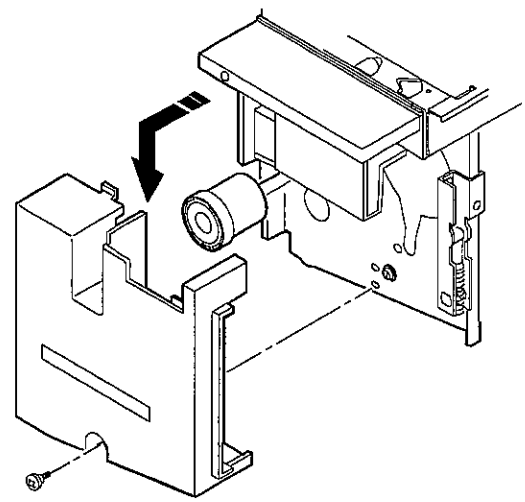
※ For attachment of the paper guide FA and the fusing auxiliary P.G, refer to the figure below.

※ Fix the paper guide positioning plates F/R at the top of the FU frames F/R markings with screws. Attach the paper guide FA ass'y under the paper guide positioning plates F/R without clearance.



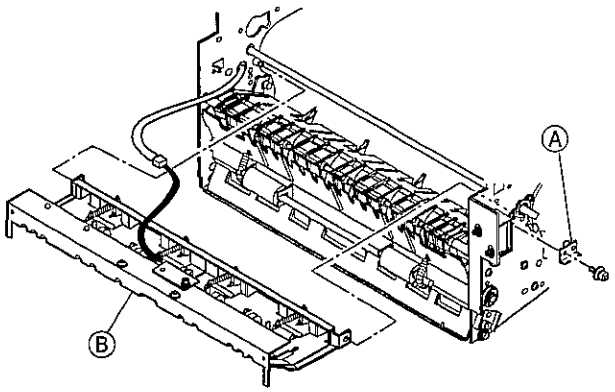
### (3) Upper and lower separation pawls

① Remove the Fuser front cover. (1 screw)



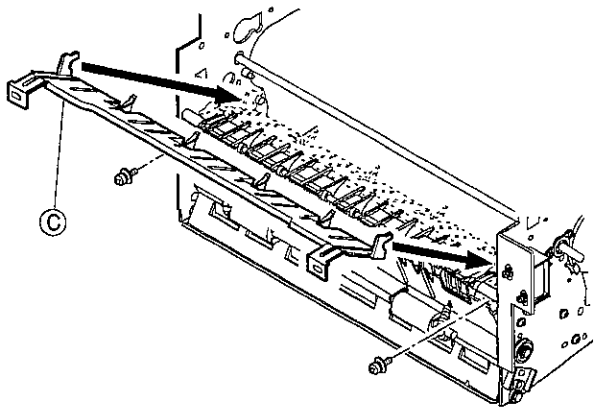
② Remove the Fuser plate ass'y Ⓐ and remove the paper guide FB unit Ⓑ. (1 blue screw, 1 connector)

③ Remove the upper separation pawls. (4 pcs. in total)

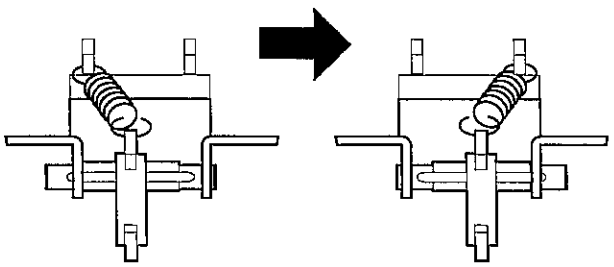



④ Remove the paper guide FC unit Ⓒ. (2 blue screws)

⑤ Remove the lower separation pawls. (4 pcs. in total)




※ When replacing the separation pawls, shift the hooking position of the spring.
Shift the mounting position of the paper guide (FB · FC) at maintenance of every 125K.



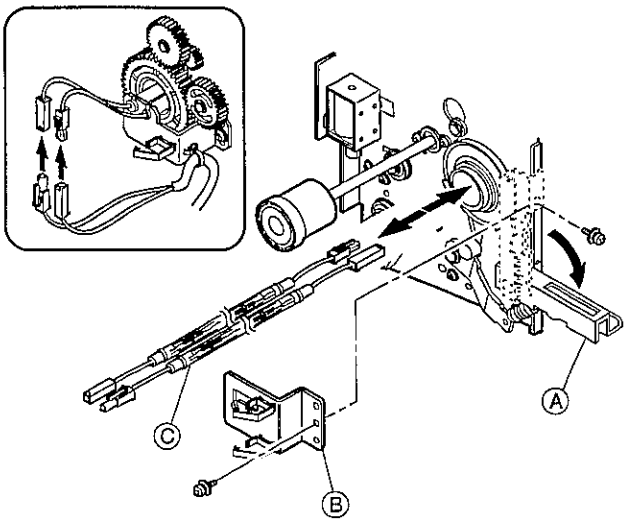
## (4) Heater lamp

① Remove the fuser front cover. (Refer to (3)-①.)

② Release the pressure lever Ⓐ on the front side. (1 blue screw)

③ Remove the heater lamp holder F Ⓑ.

④ Remove the heater lamp Ⓒ. (2 connectors each)




※ Note that the heater lamp connectors differ to prevent against mis-connection.

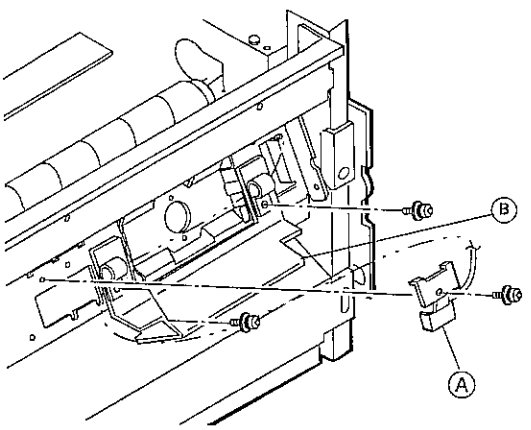
| | SD-3062 |
|---|---|
| Heater lamp 1 | 1075W |
| Heater lamp 2 | 700W |

## (5) Thermistor

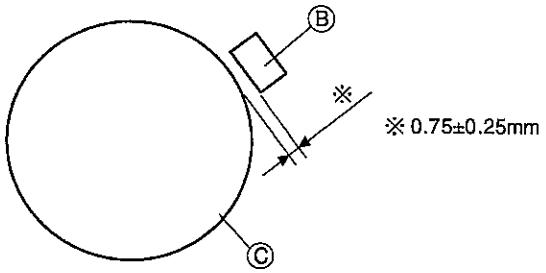
① Remove the Fuser front cover. (Refer to (3)-①.)

② Remove the thermistor Ⓐ. (1 screw, 1 connector)

※ When removing thermistor Ⓐ, be careful not to scratch the heat roller surface with pre-fusing guide Ⓑ.

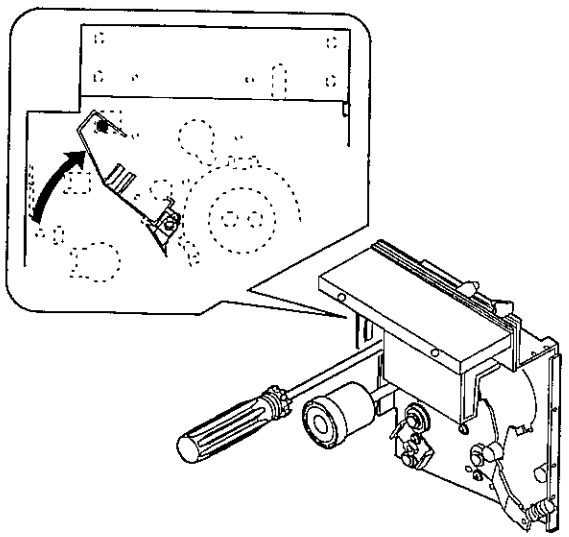


* The clearance between the thermostat Ⓑ and the upper heat roller Ⓒ must be 0.75 ±0.25 mm.




## (6) Upper and lower heat rollers

* Tips for heat roller replacement
  Lift the paper guide and insert a screwdriver to separate the separation pawl from the heat roller for facilitating replacement.



① Remove the heater lamp. (Refer to (4).)

② Slide the thermistor mounting plate unit Ⓐ upwards. (2 blue screws)

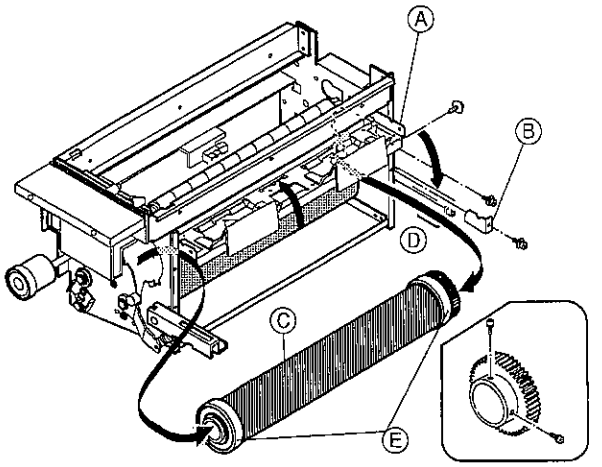
③ Release the pressure lever. (each 1 blue screw)

④ Remove the bearing holding plate Ⓑ. (1 blue screw)

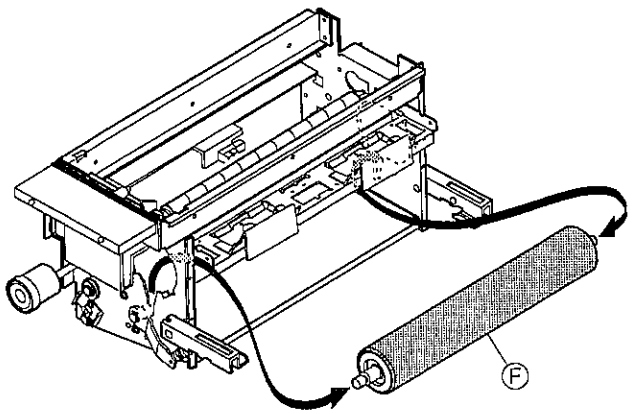
⑤ Remove the upper heat roller Ⓒ.
When attaching the upper heat roller Ⓒ, first insert the rear frame side, then fix the front frame sice.

⑥ Remove the heat roller gear Ⓓ. (2 screws)

⑦ Remove the heat roller bearings (F/R) Ⓔ.




⑧ Remove the lower heat roller Ⓕ.




* Be careful not to scratch the heat roller and the gear.

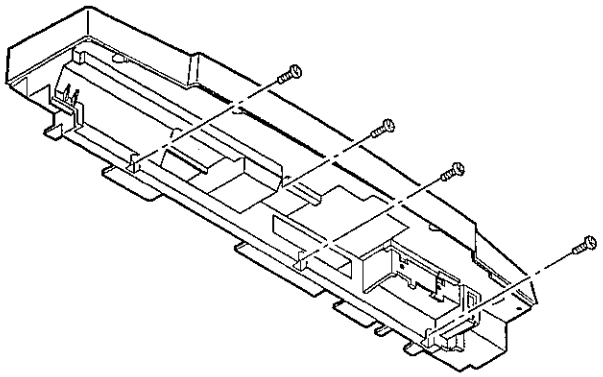
# 3. Operation panel

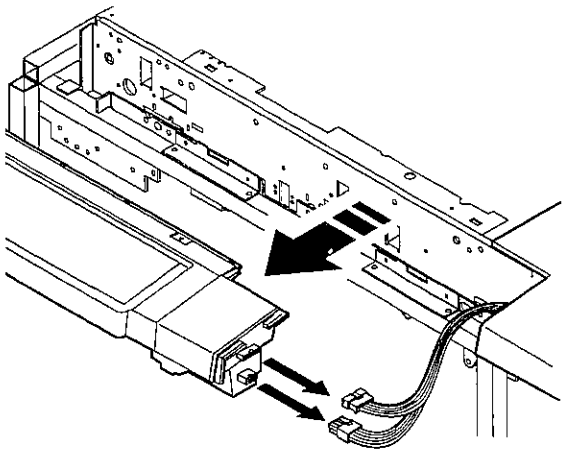
## (1) Operation panel removal

① Remove the table glass.(2 screws)

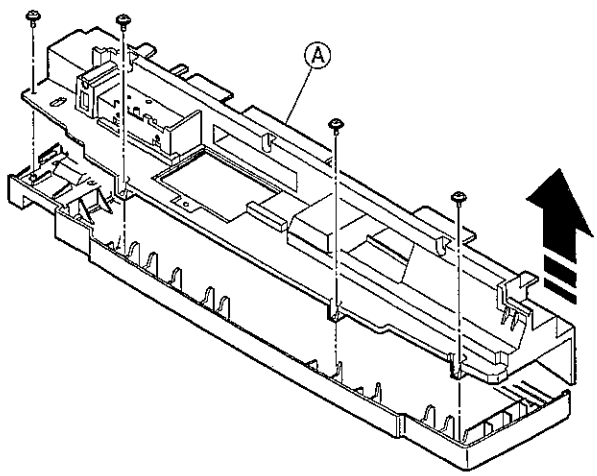
② Remove the catch plate. (Each one screw)

③ Remove the operation panel unit. (4 screws, 2 connectors)

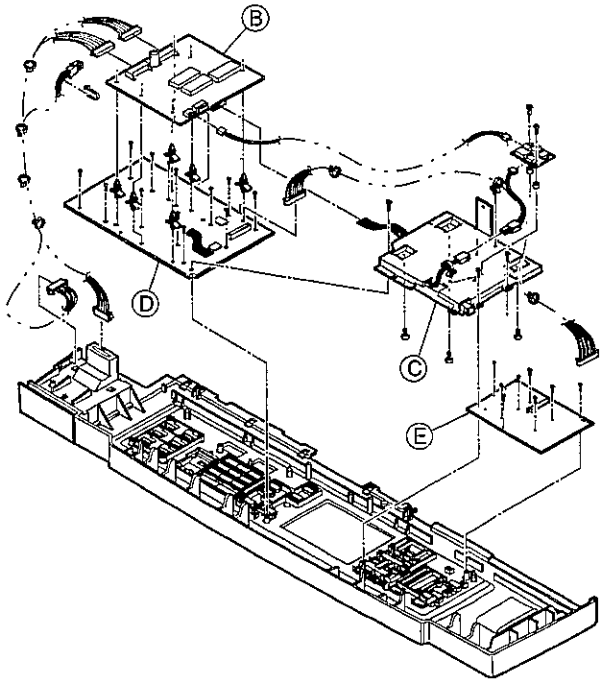




④ Remove intermediate cabinet Ⓐ of the operation panel. (4 screws)



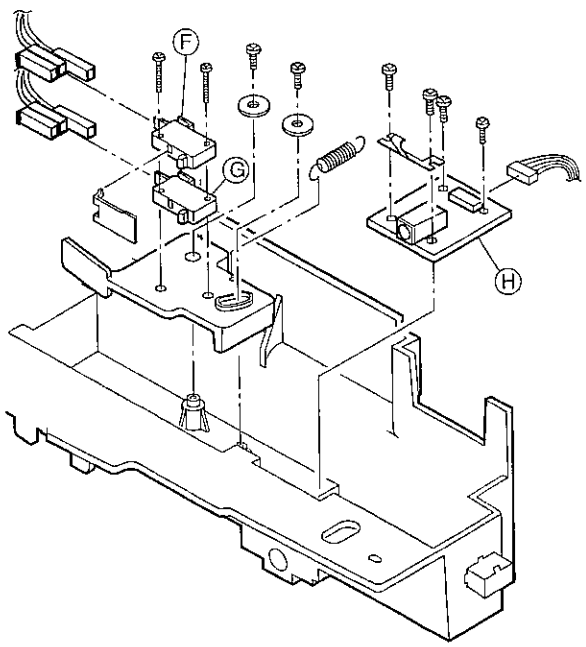

⑤ Remove operation control PWB Ⓑ, LCD unit Ⓒ, operation PWB 1 Ⓓ, and operation PWB 2 Ⓔ.




## (2) Door switch removel

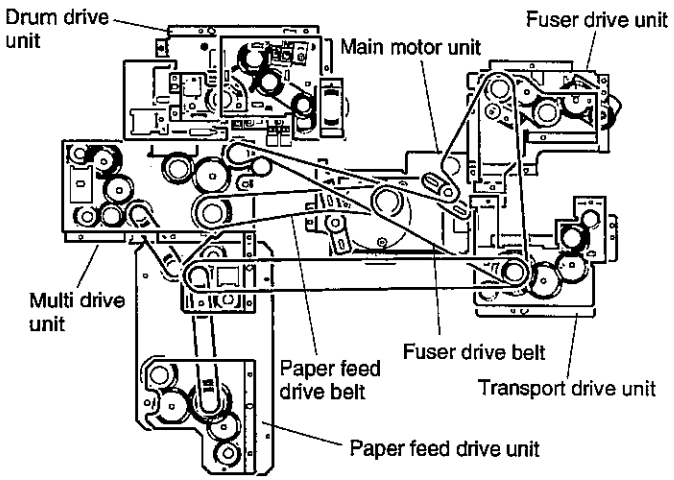
① Remove door switch Ⓕ and door switch Ⓖ. (2 screws)

② Remove commander I/O PWB Ⓗ. (2 screws)



# 4. Drive section

- The drive section is composed of the following six units.

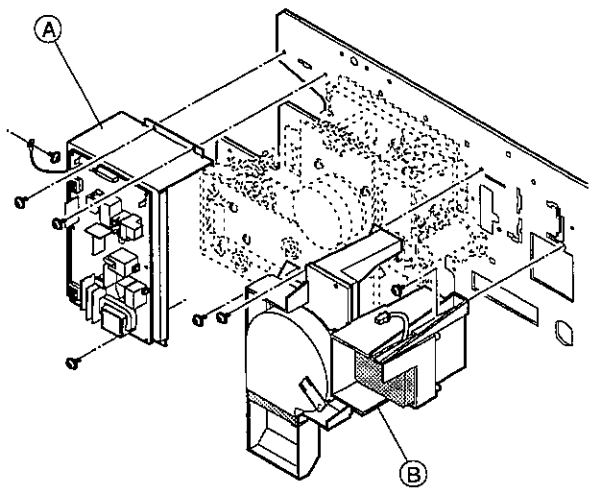



## (1) Drum drive unit

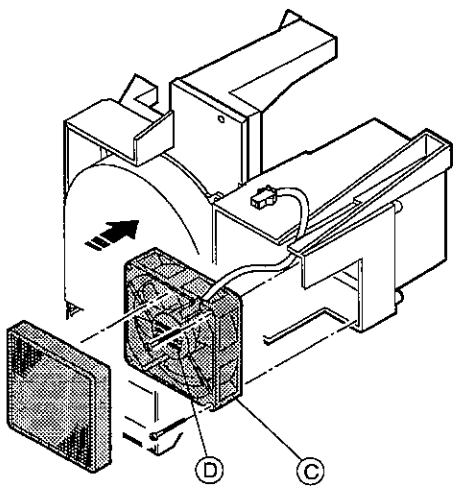
① Pull out the duplex/transport unit and the developer unit.

② Remove the suction fan duct Ⓑ. (4 screws, 2 connectors)

③ Remove the high voltage PWB mounting plate Ⓐ. (3 screws, 1 grounding screw, 8 connectors)




※ When attaching the colling fan to the suction fan duct, place the label Ⓓ so that it is on the surface.



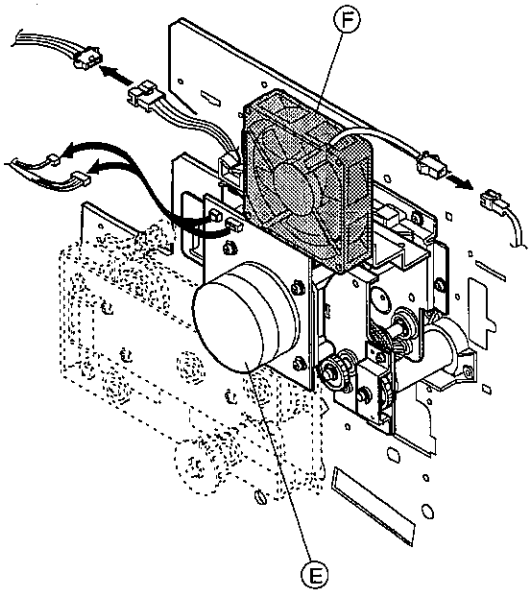

④ Remove the grounding wire from the high voltage interface harness. (1 screw)

⑤ Remove the drum motor harness from the drum motor Ⓔ. (2 connectors)

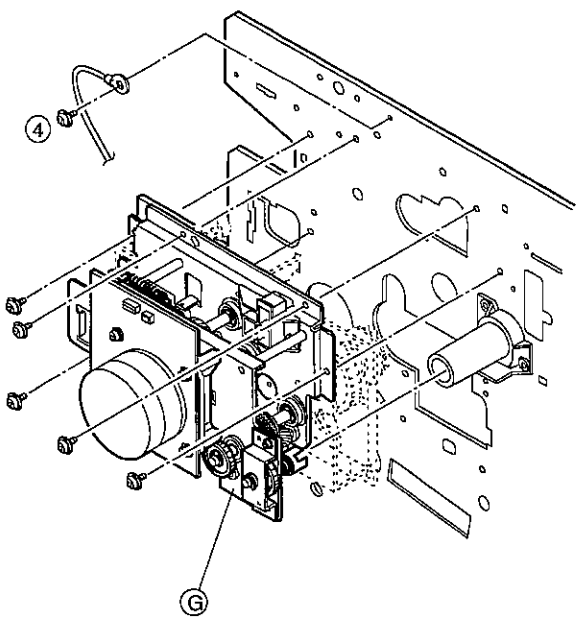
⑥ Remove the drum motor harness and the high voltage interface harness from the wire saddle.

⑦ Disconnect the connector of the D interface harness. (1 connector)

⑧ Disconnect the connector of the cooling fan Ⓕ. (1 connector)




⑨ Remove the drum drive unit Ⓖ. (5 screws)



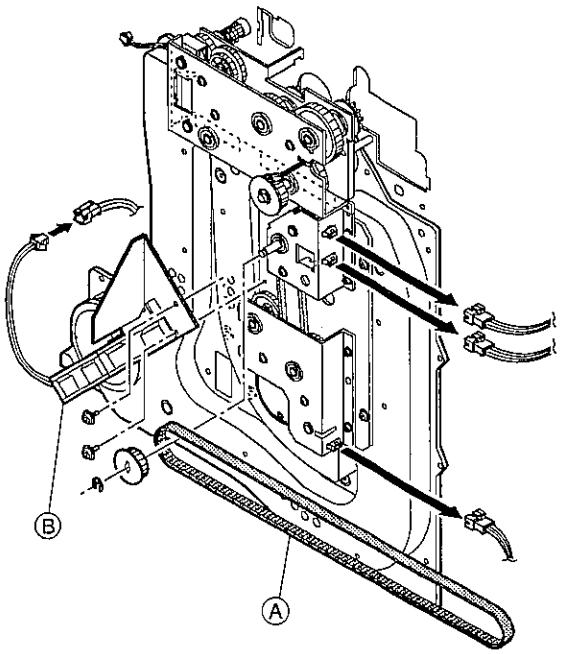
## (2) Paper feed drive unit

① Pull out the duplex/transport unit.

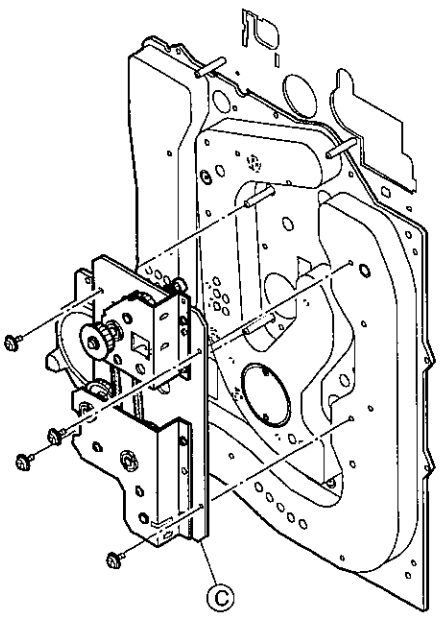
② Remove the paper transport drive belt Ⓐ.

③ Remove the CF mounting plate ass'y Ⓑ from the paper feed drive unit. (2 screws, 1 connector)

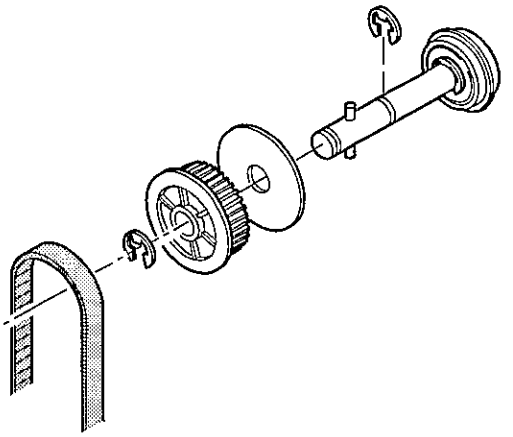
④ Disconnect the clutch connectors. (3 connectors)




⑤ Remove the paper feed drive unit Ⓒ. (5 screws)




※ Be careful to the installing direction of the 38T pulley.



## (3) Multi drive unit

① Pull out the intermediate tray unit.

② Remove the high voltage PWB mounting plate. (Refer to (1)-③.)

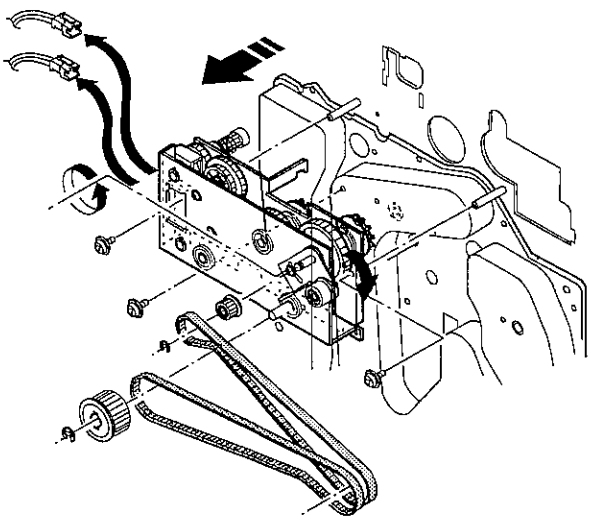
③ Remove the paper transport drive belt Ⓐ. (Refer to (2)-②.)

④ Remove the PS drive belt Ⓑ.

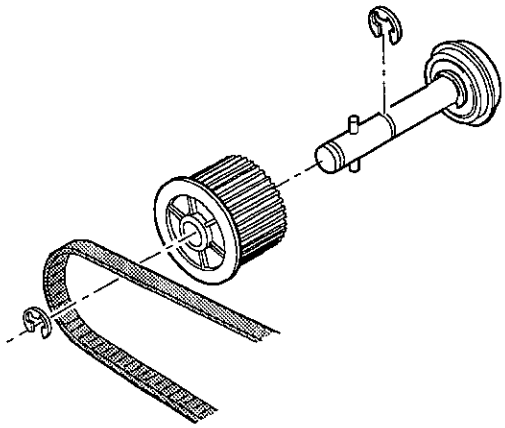
⑤ Disconnect the clutch connector. (2 connectors)

⑥ Remove the paper feed drive unit. (Refer to 2.)

⑦ Remove the manual paper feed drive unit Ⓒ. (3 screws)



※ Be sure the installing direction of the 37T pulley is correct.



## (4) Fuser drive unit

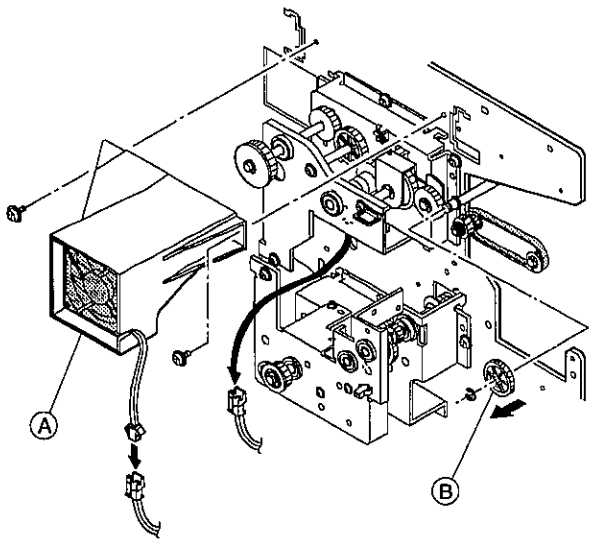
① Remove the fuser unit.

② Remove the fuser fan duct Ⓐ. (2 screws, 1 connector)

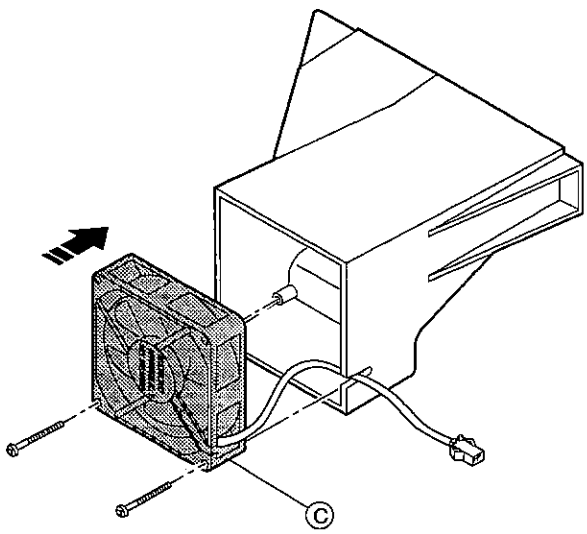
③ Remove the 37T gear Ⓑ of the paper exit unit. (One E-ring)

④ Remove the main body harness from the wire saddle.

⑤ Disconnect the connector of the fuser clutch solenoid (1 connector).

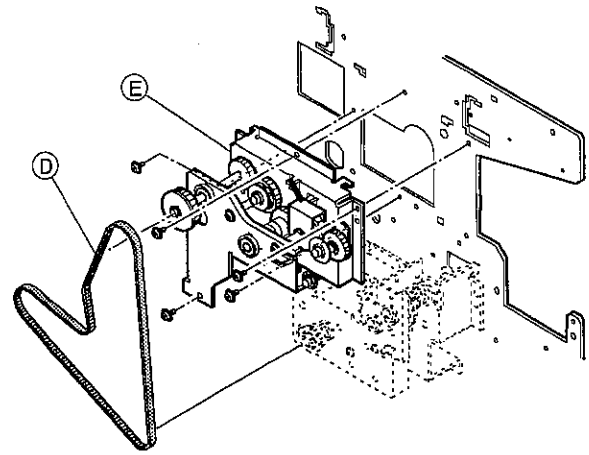



※ When attaching the cooling fan Ⓒ to the fuser fan duct, place the label so that it is on the surface.

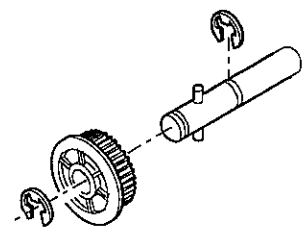



⑥ Remove the fuser drive belt Ⓓ.

⑦ Remove the fuser drive unit Ⓔ. (5 screws)




※ Be careful to the installing direction of the 38T pulley. (Refer to (2)-⑤.)



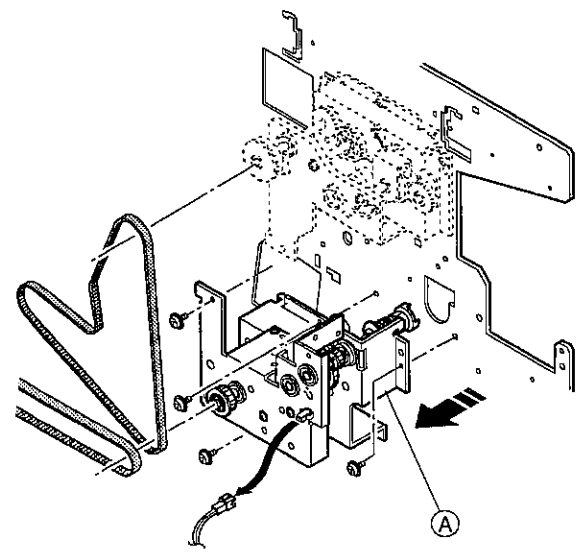
## (5) Transport drive unit

① Pull out the fuser unit.

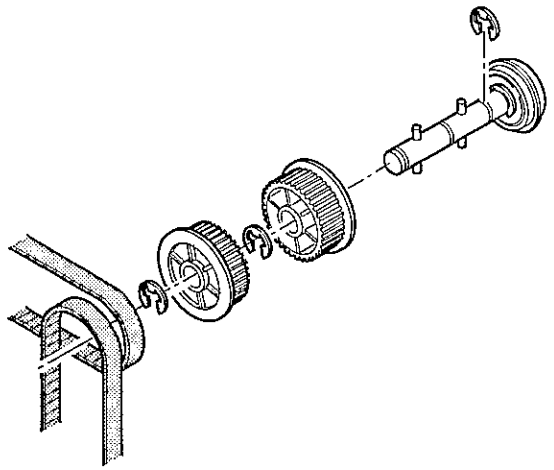
② Remove the fuser drive belt. (Refer to (4)-⑦.)

③ Disconnect the connector of duplex transport roller clutch. (1 connector)

④ Remove the transport drive unit Ⓐ. (4 screws)

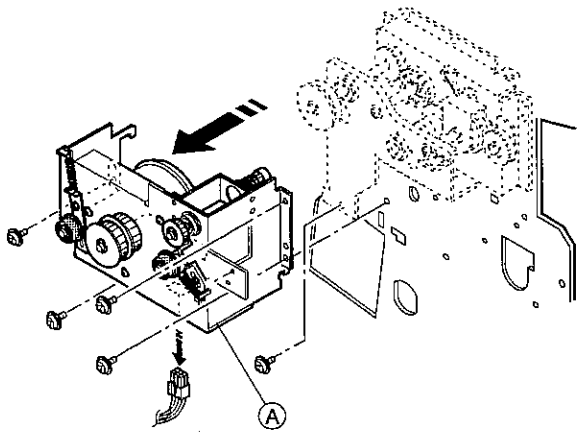



※ Be careful to the installing direction of the 30T pulley.

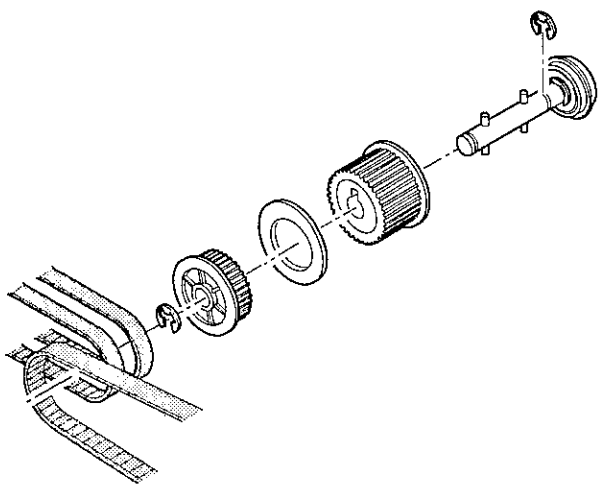


### (6) Main motor unit

① Pull out the duplex/transport unit and the fuser unit.
② Remove the suction fan duct. (Refer to (1)-②.)
③ Remove the fuser drive belt. (Refer to (4)-⑥.)
④ Remove the transport drive unit. (Refer to (5).)
⑤ Remove the common tightening screw of the fuser drive unit. (1 screw)
⑥ Remove the paper feed drive belt. (Refer to (3)-③.)
⑦ Remove the PS drive belt. (Refer to 3-④.)
⑧ Remove the main harness from the wire saddle.
⑨ Remove the main motor connector. (1 connector)
⑩ Remove the main motor unit Ⓐ. (4 screws)



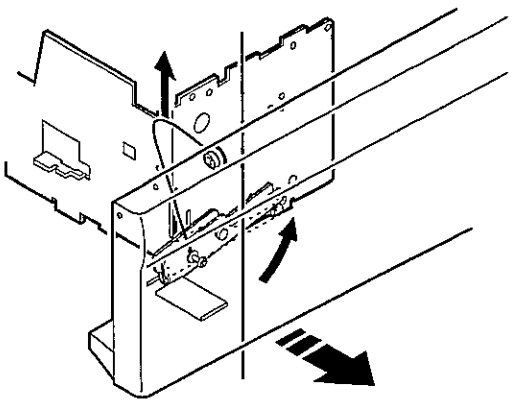

※ Be sure the installing direction of the 38T pulley and 32T pulley.

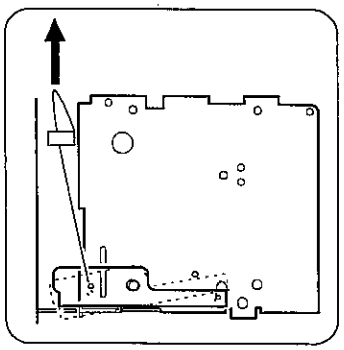


## 5. 1000-sheet tray unit

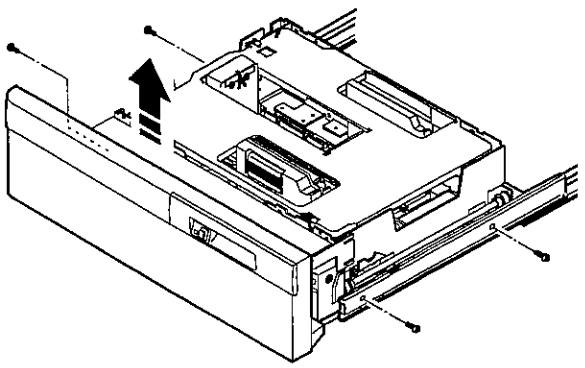
### (1) Tray unit removal

① Remove the front cabinet (left).
② Lift the tray lock release wire and release the lock.



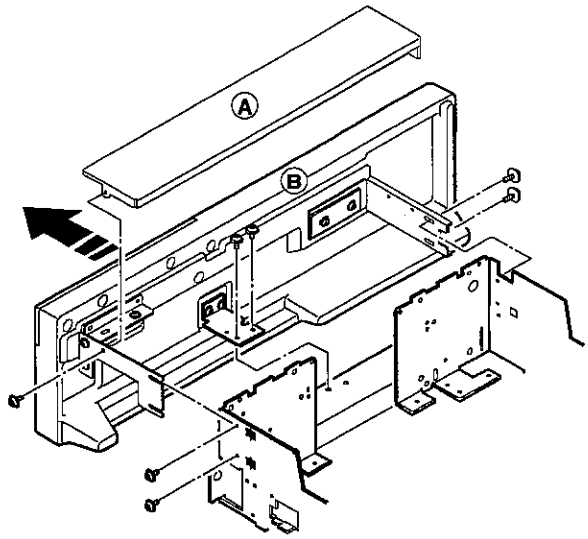


③ Pull out the tray unit.
④ Remove four fixing screws of the tray unit, and remove the unit from the rail.

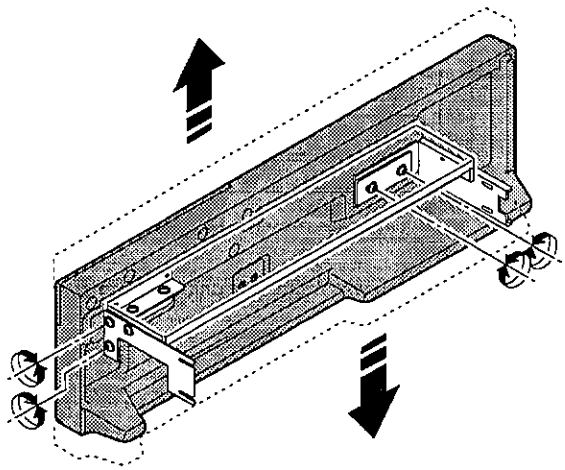


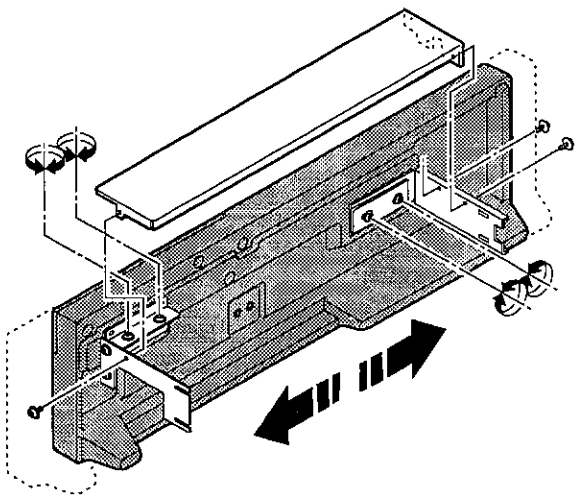
### (2) Tray front fitting removal

① Remove tray intermediate cabinet Ⓐ. (3 screws)
② Remove tray front fitting Ⓑ. (6 screws)




※ When attaching the tray front fitting, loosen the fixing screws of the other fittings and adjust so that there are no clearance and protrusion among them.



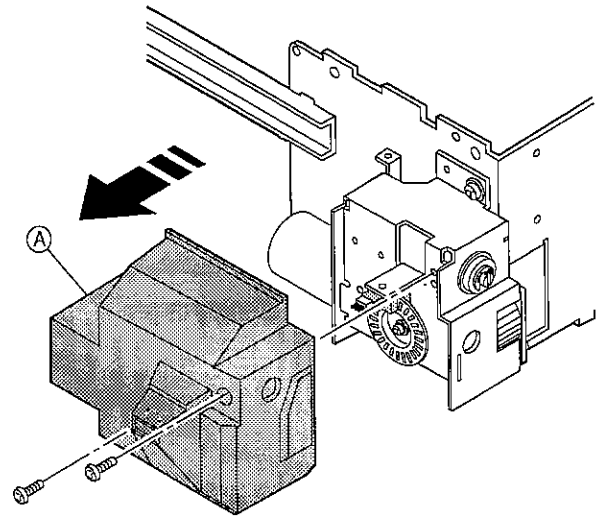


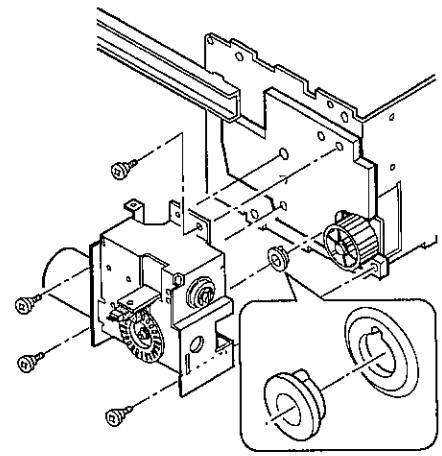
### (3) Lift motor drive unit removal

① Remove the tray front fitting.

② Remove the lift motor drive unit cover Ⓐ. (2 screws)

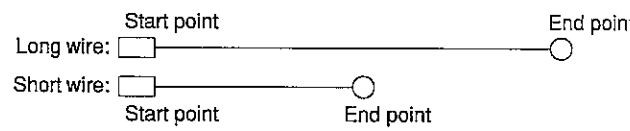
③ Remove the motor drive unit. (4 screws)



### (4) Tray lift wire stretching

For the tray lift wires, two kinds of wire are used in the front and the rear frames.




**(Long wire)**

① Insert the wire (start point) into the wire stop plate (front and rear) hole and stretch the wire as shown in the figure.

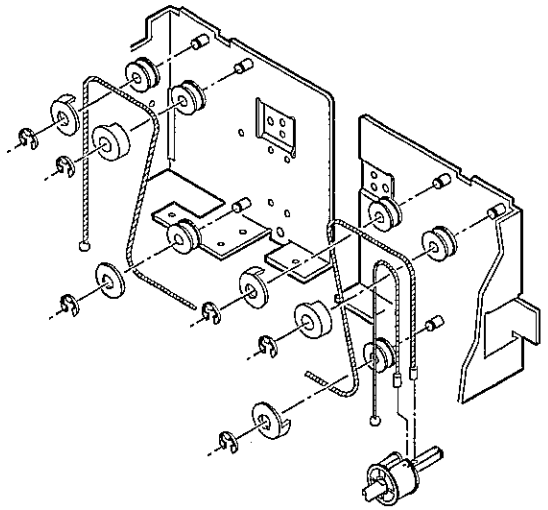
② After inserting the wire start point into the wire winding shaft hole, slide the wire winding pulley to fix the wire start point.

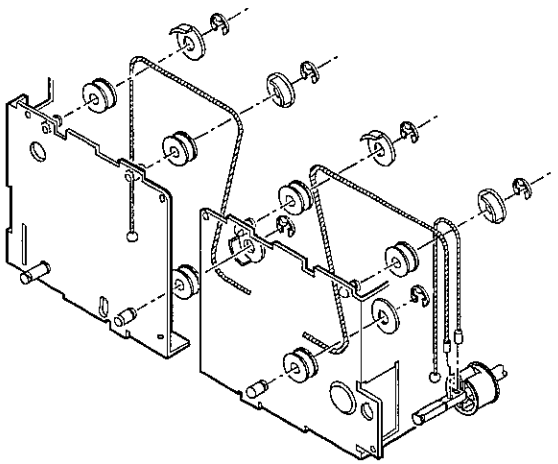
**(Short wire)**

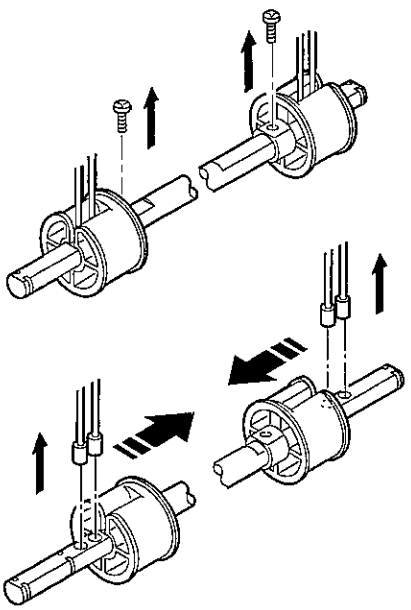
③ Insert the wire (start point) into the tray bottom plate hole (front and rear) and stretch the wire as shown in the figure.

④ After inserting the wire start point into the wire winding shaft hole, slide the wire winding pulley to fix the wire start point.

⑤ Fix the wire winding pulley (front and rear). (1 screw each)





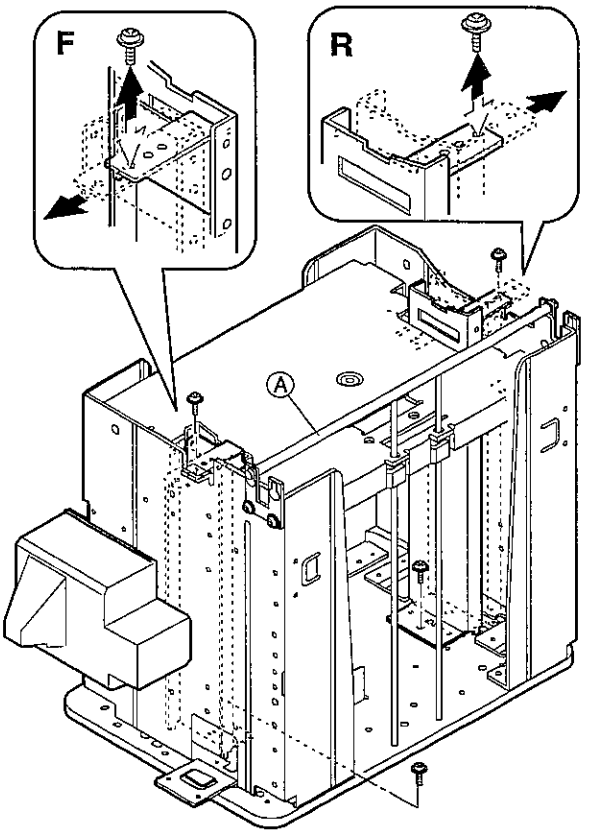


## 6. 2000-sheet tray unit

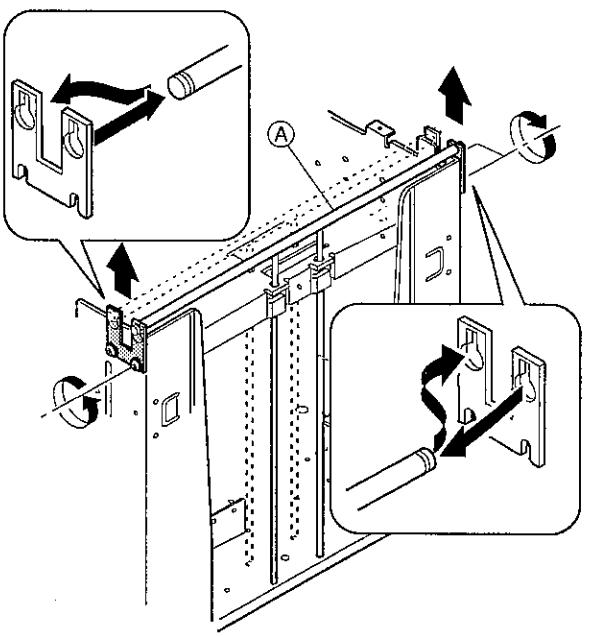
**(Paper size selection)**

* For BG shaft ass'y Ⓐ, use A4 or B5 only.

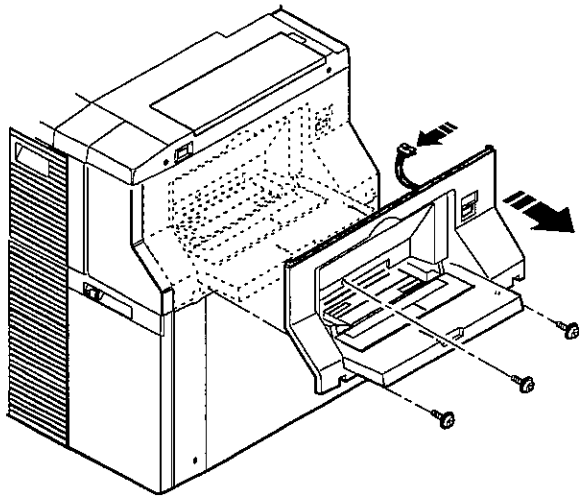
① Set the size guide F and R ass'y to the specified paper size.



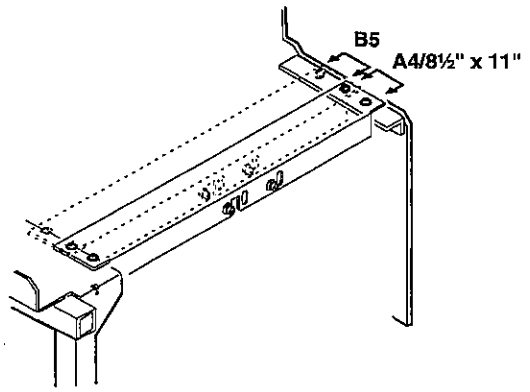

② Set the BG shaft ass'y Ⓐ to the specified paper size. (In the case of 8 1/2" x 11", remove the BG shaft.)



③ Remove the right cabinet (left). (2 screws)



④ Set the paper feed tray rising sensor (TUD1) mounting plate to the specified paper size.




## 7. Switchback (reverse) unit

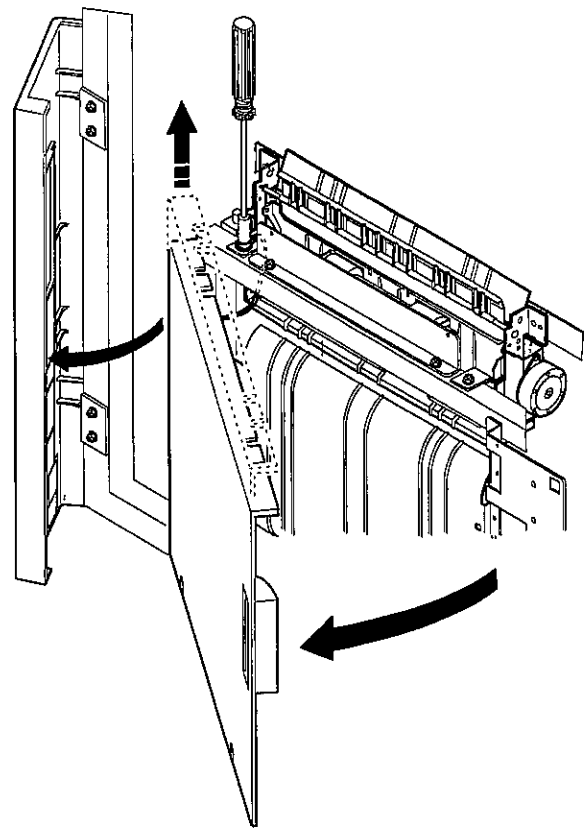
### (1) External fitting removal

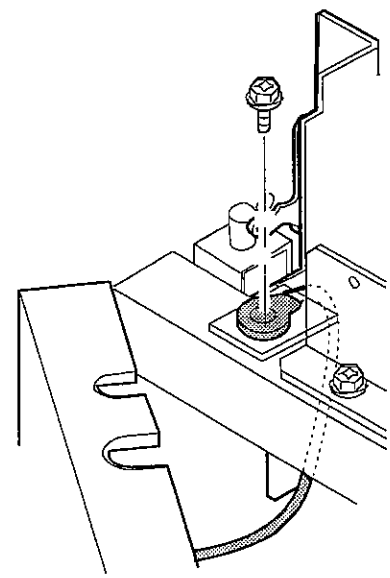
① Remove the front cabinet (left).

② Remove the rear cabinet. (9 screws)

③ Remove the paper exit cabinet. (7 screws)

④ Remove the left cabinet (lower). (Wire fixing screw, 1 pc.)





### (2) Unit removal

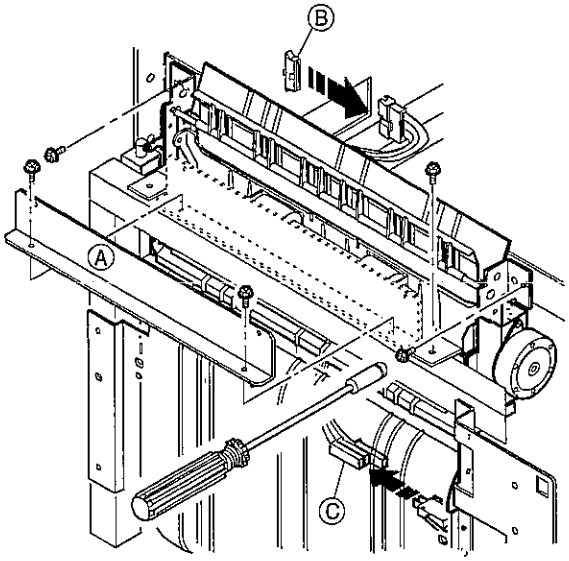
① Remove the paper exit unit.

② Pull out the 1000-sheet paper feed tray (No. 2).

③ Remove the left cabinet (upper) mounting plate Ⓐ. (2 hex screws)

④ Disconnect 10 pin connector Ⓑ in the rear frame side and the duplex copy tray door switch (DDSW) 2 pin connector Ⓒ.

⑤ Remove the switchback unit fixing hex screws (4 pcs.) and remove the unit.




## 8. Air paper feed unit

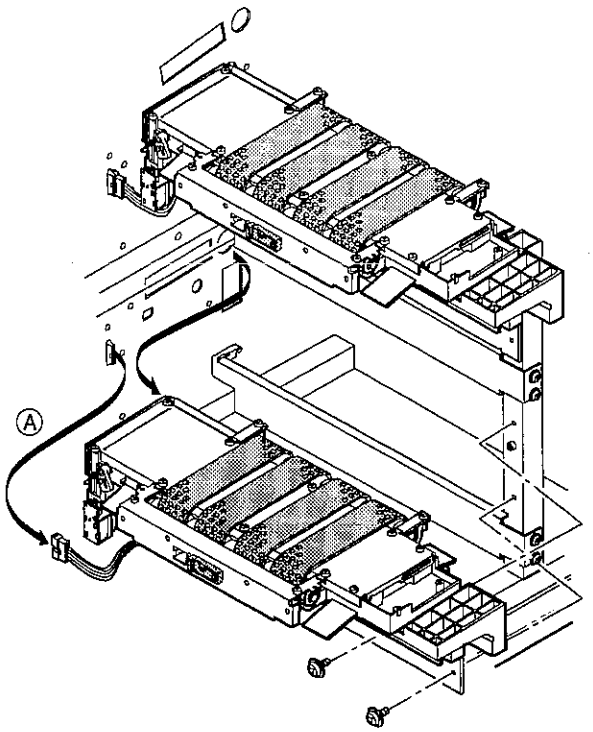
### (1) Air paper feed unit removal (For No. 1, No. 2, N. 3 tray)

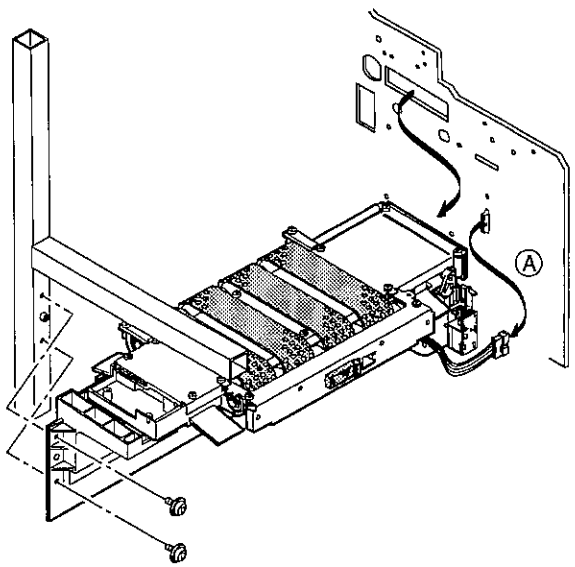
① Open the front cabinet (L and R).

② Remove the paper feed tray unit from the main body.

③ Remove the air paper feed unit fixing screws (2 pcs.).

④ Disconnect the rear frame side 8 pin connector Ⓐ, and remove the unit.

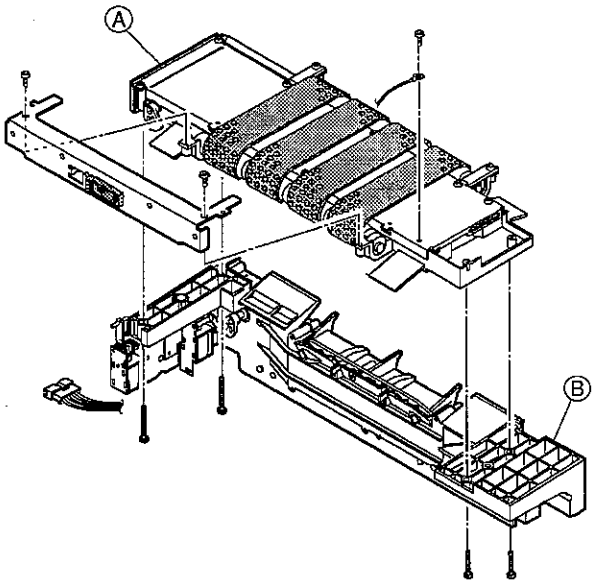


### (2) Air paper feed unit paper feed belt removal

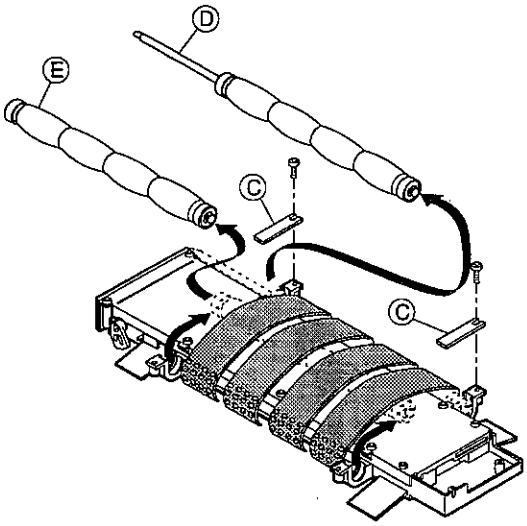
① Separate the suction duct unit Ⓐ and the blower duct unit Ⓑ. (4 screws)

② Remove the paper feed tray upper limit sensor (TLMD) mounting plate. (2 screws)

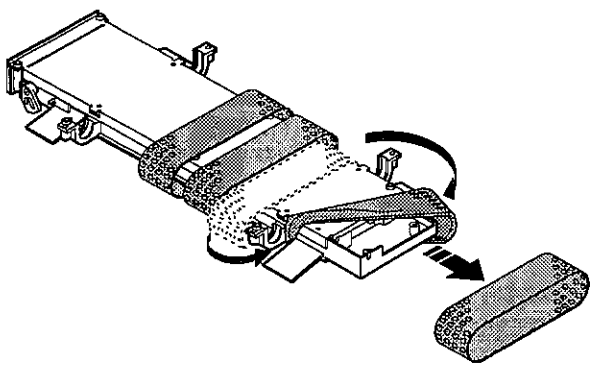



③ Remove the mounting screw of the paper feed belt drive shaft bearing pressing plate Ⓒ. (2 screws)

④ Remove the paper feed belt drive shaft Ⓓ and the follower shaft Ⓔ from the duct unit.




⑤ Remove the paper feed belts (4 pcs.) from the suction duct unit (front frame side).



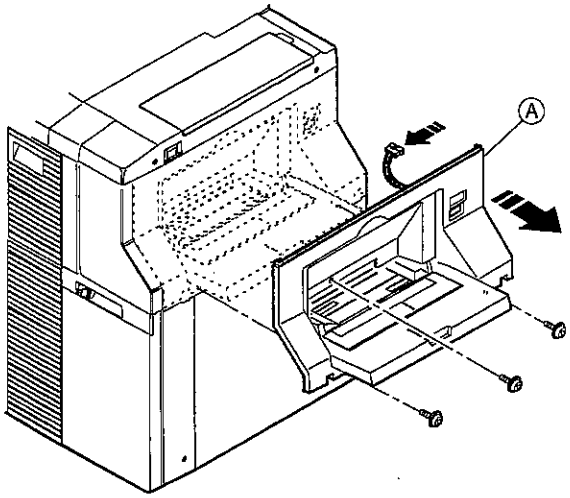
When replacing the paper feed belts, replace all the four belts at the same time.

## 9. Manual paper feed base unit

### (1) Unit attachment and removal

① Remove the three screws, and disconnect 7 pin connector which is connected tot he chassis from the right side of the manual paper feed base unit.

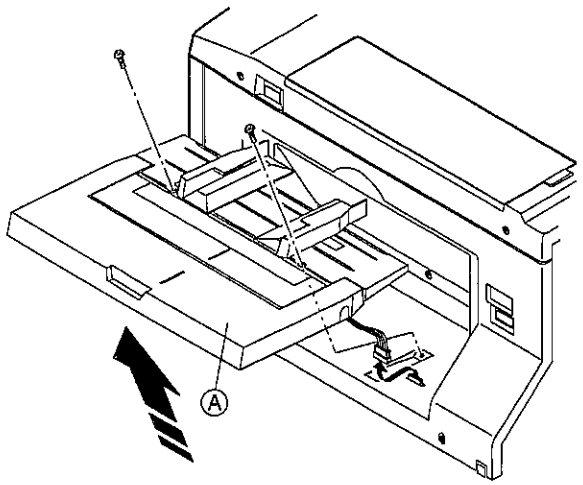
② Remove the unit Ⓐ.




### (2) Manual paper feed tray removal

① Remove the two screws.

② Disengage the four pawls in the back of the manual paper feed tray Ⓐ from the four holes in the manual paper feed base unit, and remove the manual paper feed tray Ⓐ.

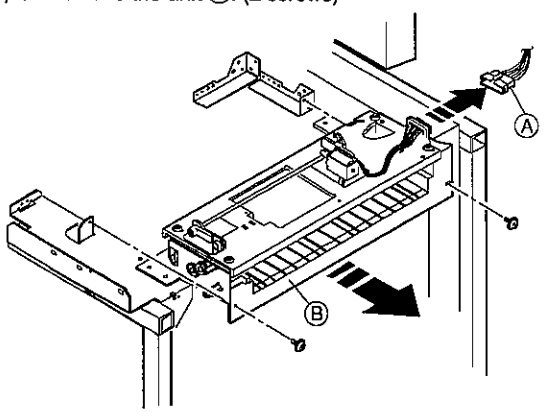



## 10. Multi paper feed unit

### (1) Unit attachment and removal

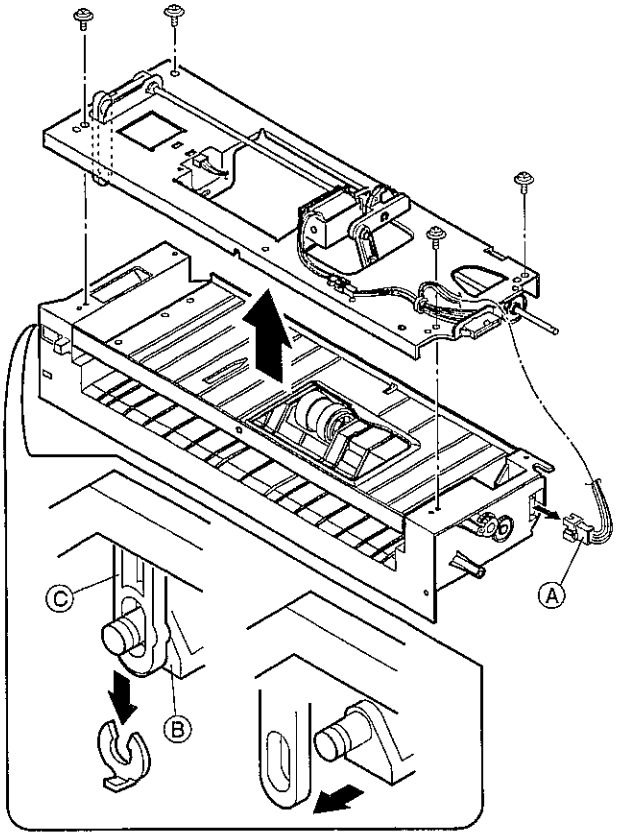
① Remove the manual paper feed base unit.

② Remove the multi paper feed unit and the main harness connector Ⓐ, and remove the unit Ⓑ. (2 screws)



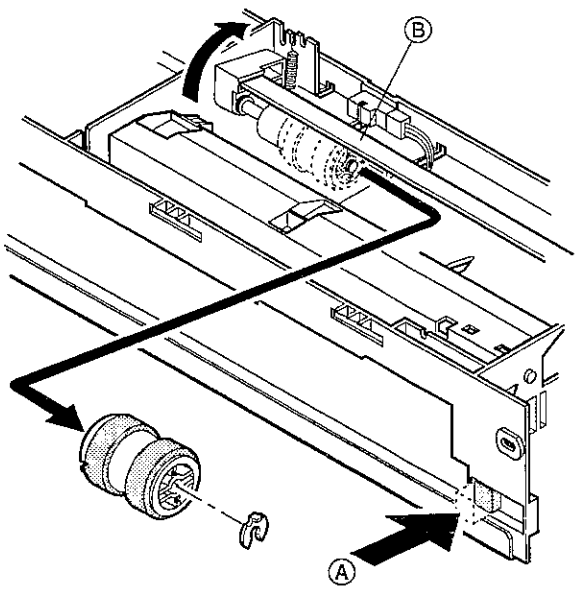
## (2) Paper feed connecting plate ass'y removal

① Remove the unit.
② Disconnect the paper entry sensor (MPFD) connector (A).
③ Remove the stopper at the connecting section of the gate Ⓑ and the G drive arm 2 Ⓒ.
④ Remove the four screws, and remove the paper feed connoting plate ass'y.



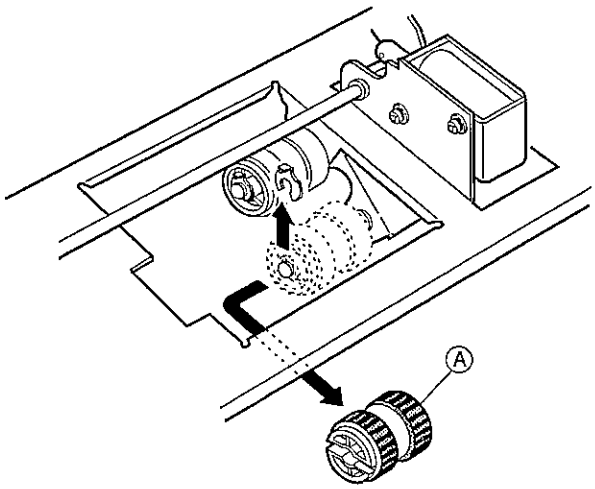

## (3) Reverse roller and torque limiter removal

① Remove the multi paper feed unit.
② Remove the reverse roller stopper.
③ Press the pressure release lever Ⓐ to release the roller pressure.
④ While pressing the pressure release lever, remove the reverse roller and the torque limiter.
⑤ While pressing the pressure release lever, insert a new roller and a new limiter. In this case, be careful not to scratch the roller with the release plate Ⓑ. If necessary for easy operation, you may remove the release plate Ⓑ.



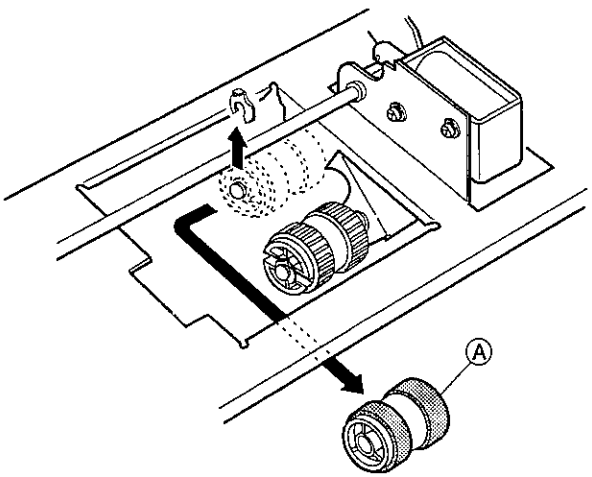

## (4) PU roller removal

① Remove the multi manual paper feed unit.
② Remove the paper feed connecting plate ass'y.
③ Remove the stopper which is fixing the PU roller.
④ Remove the PU roller Ⓐ.



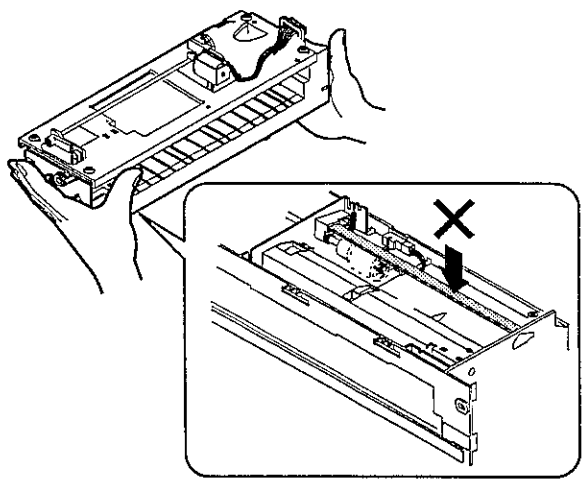

## (5) Paper feed roller removal

① Remove the multi manual paper feed unit.
② Remove the paper feed connecting plate ass'y.
③ Remove the stopper which is fixing the paper feed roller.
④ Remove the paper feed roller Ⓐ.

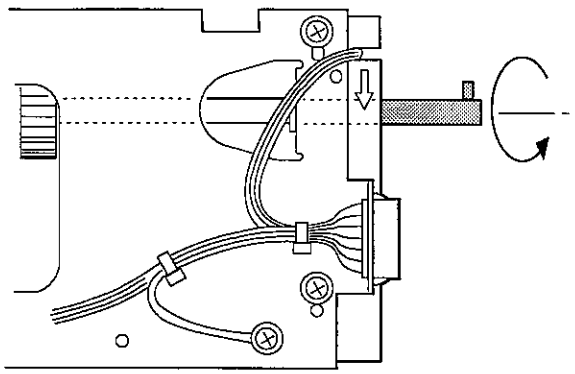



## (6) Other notes

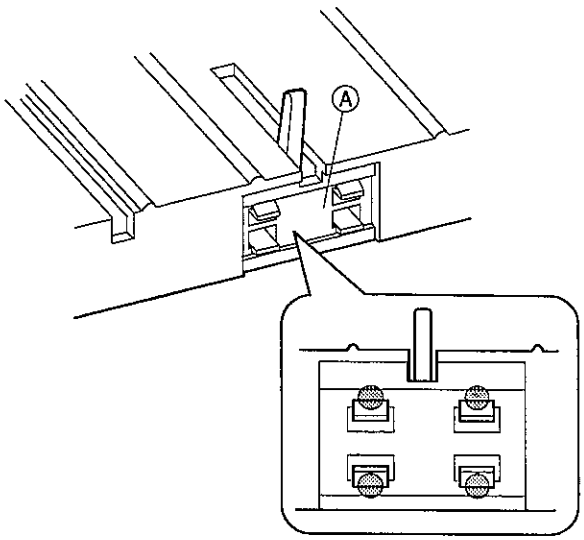
- Use a great care to handle the roller. (dirt, breakage, etc.)
- When lifting the multi paper fed unit, hold the release plate in the bottom of the unit and be careful not to deform it.



- When rotating the paper feed shaft, be careful to the rotating direction. If it is rotated reversely, the regulating spring may be deformed or disengaged.

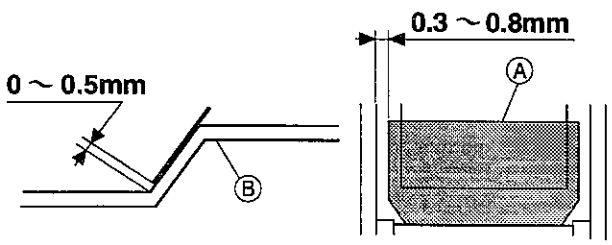


MPFD attachment
Insert MPFD Ⓐ into the specified hole, apply screw lock (as much as a sesame seed) to the detachable section. (4 shaded positions in the figure)

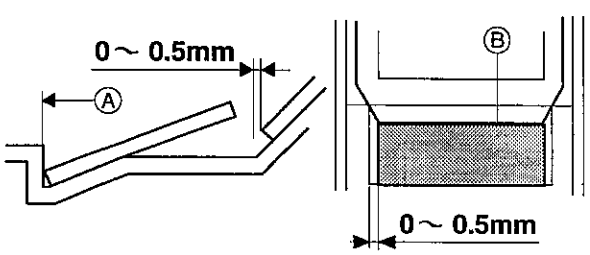



## (7) Note for single parts assembly

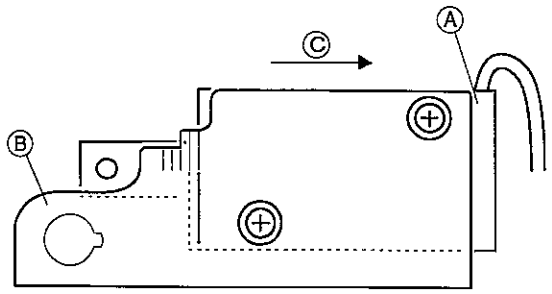
① Pat mylar Ⓐ attachment
Attach the paper feed base plate Ⓑ as specified below:




② PG pad attachment
Attach PG pad Ⓑ completely to line Ⓐ.

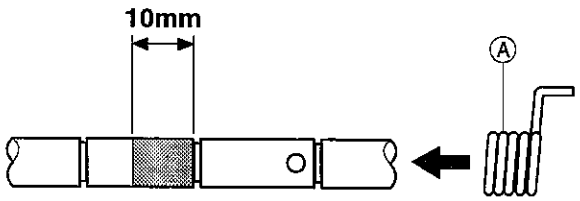



③ Multi solenoid attachment

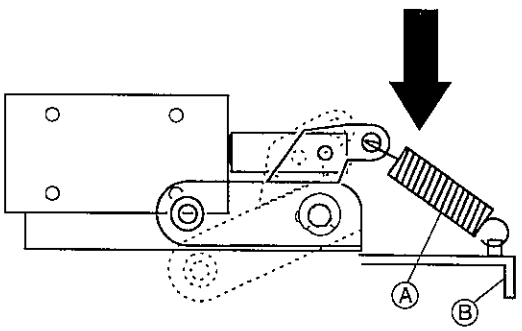



Shift the multi solenoid Ⓐ completely in the direction Ⓒ and fix it with screws.

④ Regulating spring Ⓐ attachment

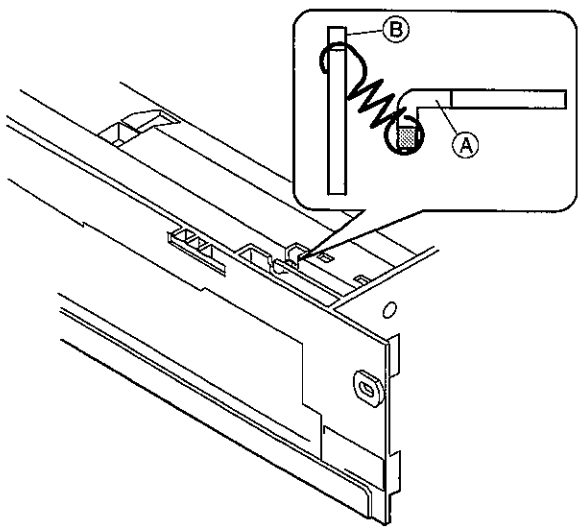



⑤ PU arm spring Ⓐ attachment



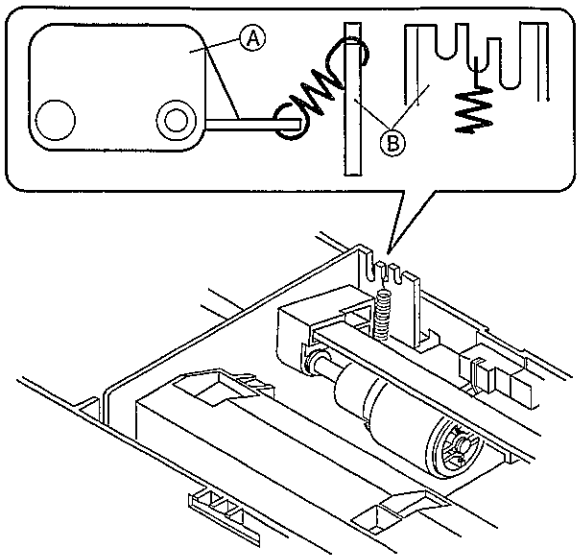

Engage the PU arm spring Ⓐ hook with the paper feed connecting plate Ⓑ. Then keep pressing the PU arm and engage the other hook.

⑥ Gate spring attachment



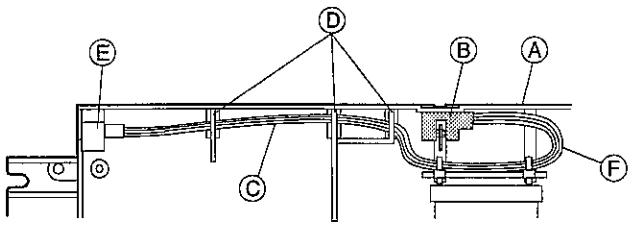

Hang the hook on the gate Ⓐ as shown in the figure, hang the other hook on the paper feed base plate Ⓑ.

⑦ Pressure spring attachment



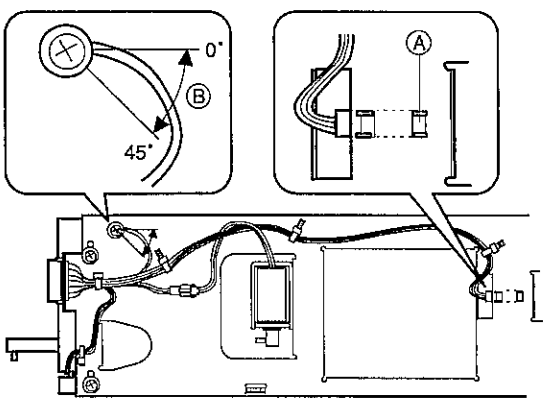

Hang the hook on the reverse plate Ⓐ as shown in the figure, and attach the other hook on the paper feed base plate Ⓑ the concave section at the center.

⑧ MPFD interface harness attachment




Attach the MPFD Ⓑ to the paper feed base plate Ⓐ, and connect the MPFD interface harness Ⓒ connector. Pass the other edge of harness connector under the ribs (3 positions) of the paper feed base plate, and insert the connector Ⓔ into the fixing hole. Allow a clearance of 5 mm or more between the MPFD and the convex section Ⓕ, and fix the convex section as shown in the figure. (2 positions)

⑨ Manual paper feed unit harness attachment




✳ Leave 5 mm (max.) of each snap band (4 pcs.) after cutting.

✳ Apply a small quantity of screw lock (as much as a sesame seed) to the detachable section Ⓐ of the photo sensor. (1 position)

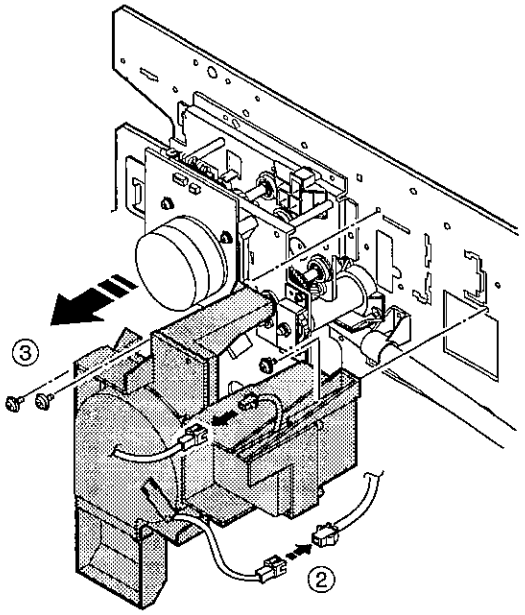
✳ The grounding wire mounting angle Ⓑ must be in the range of 0 °~ 45°.

## 11. Waste toner unit

① Remove the left cabinet and the rear cabinet.

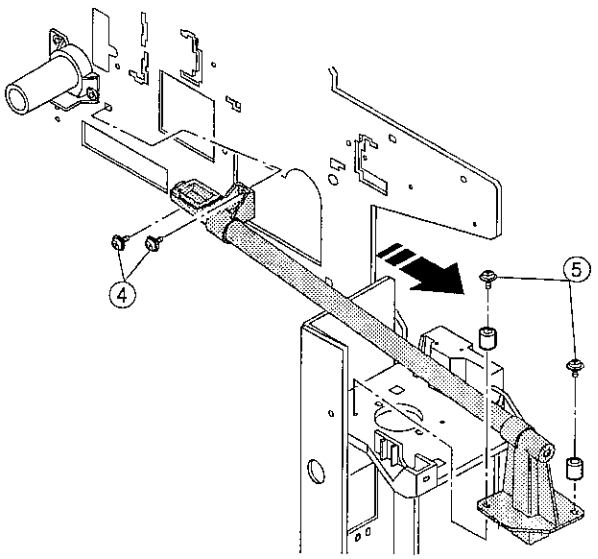
② Disconnect the fan connectors (2 pin x 2) from the suction duct.

③ Remove the suction duct. (4 screws)

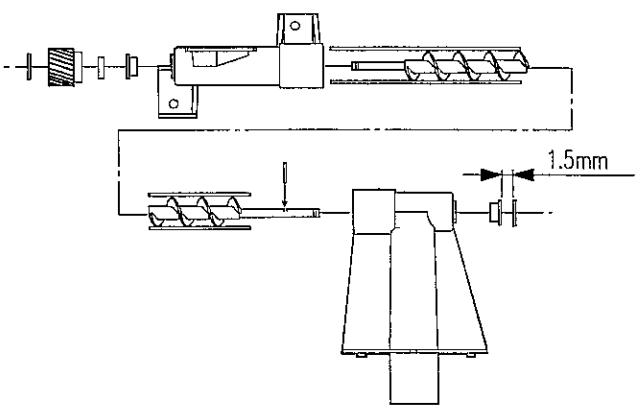



④ Remove the waste toner pipe joint mounting screws (2 pcs.).

⑤ Remove the waste toner exit port connection port mounting screws (2 pcs.) and remove the waste toner pipe unit from the paper exit side of the main body.



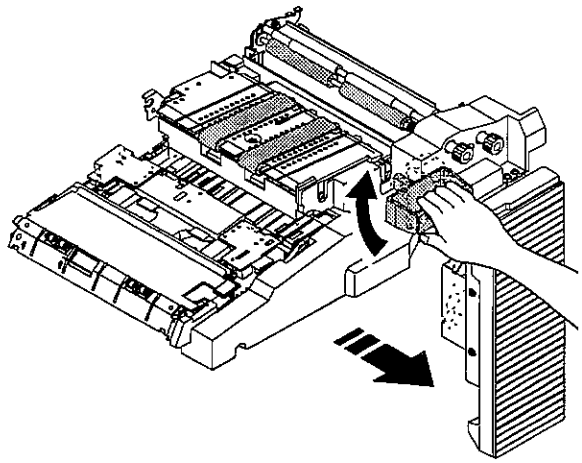

⑥ Waste toner pipe component parts attachment



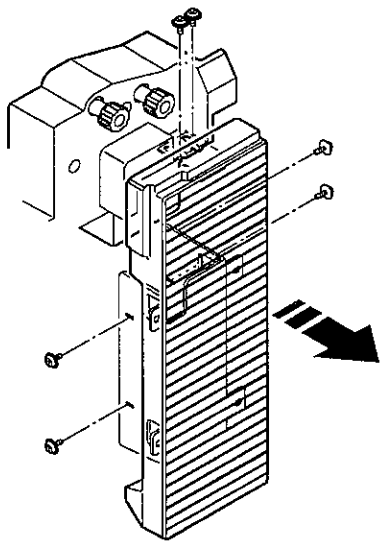
# 12. Intermediate tray unit

## (1) Intermediate tray unit removal

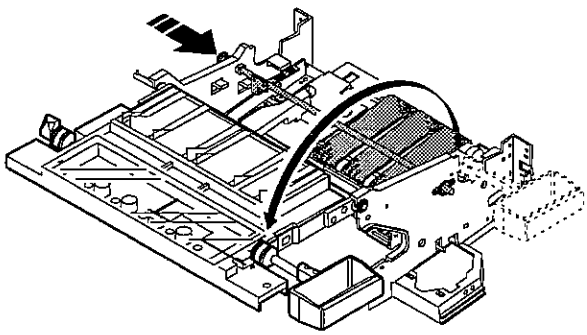
① Pull out the intermediate tray unit.



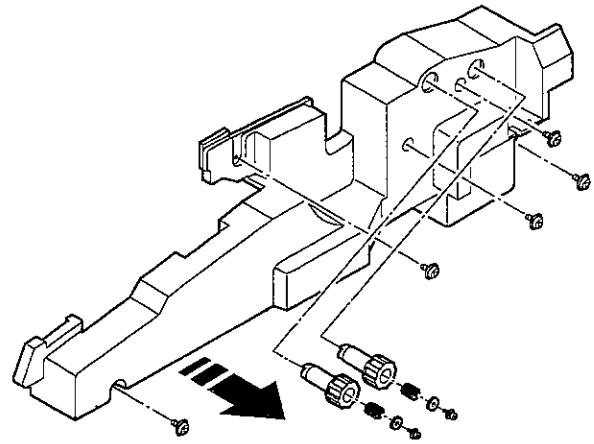
② Remove the transport unit front cabinet. (6 screws)



③ Reverse the suction unit and remove the manual knob. (1 screw each)

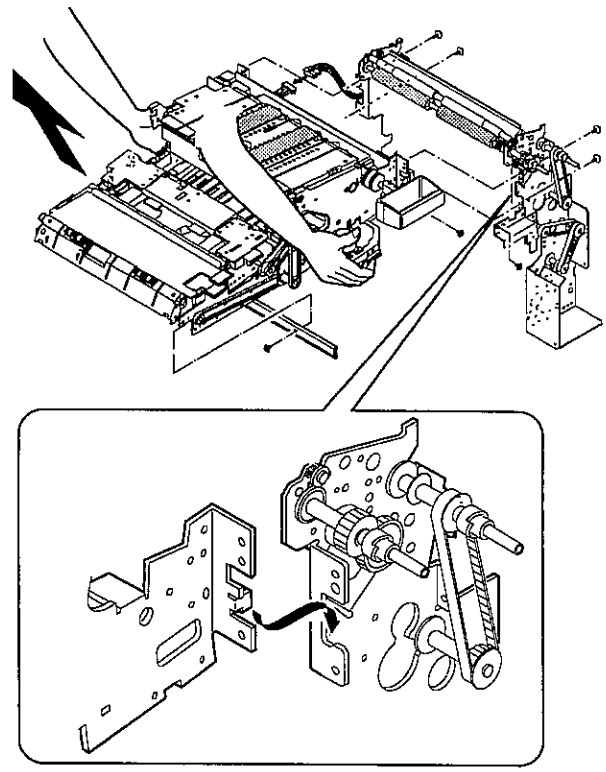


④ Remove the intermediate tray unit front cover. (5 screws)



⑤ Remove the intermediate tray unit fixing screws (7 pcs.).

⑥ Lift the intermediate tray unit to the paper exit side, and separate it from the transport unit.

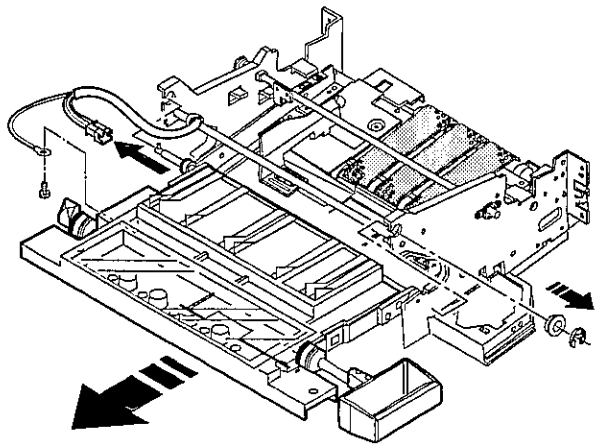


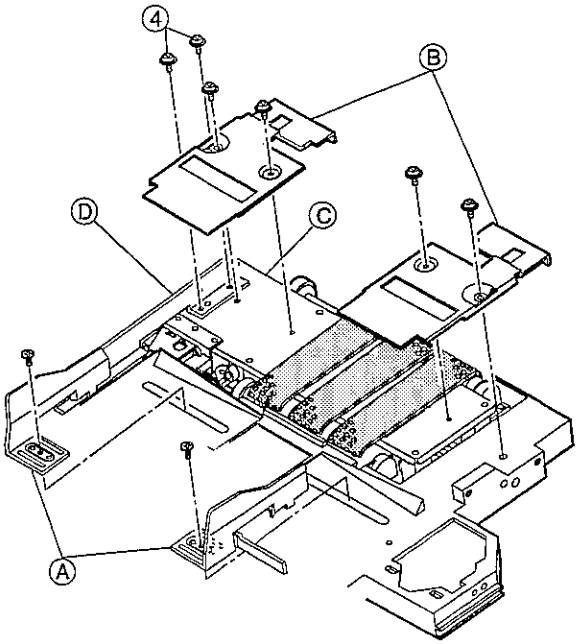
## (2) Suction unit removal

① Reverse the suction unit.

② Remove the ball bearing in the front side. (E ring, 1 position)

③ Remove the suction unit. (1 pc. of E-ring, 1 pc. of grounding screw)

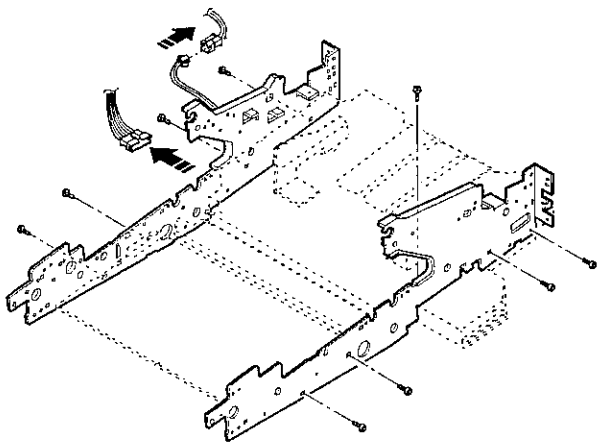





## (3) Paper feed belt removal

① Remove the intermediate tray unit. (Refer to (1).)

② Remove the paper feed tray unit from the duplex copy tray. (9 screws, 2 connectors)

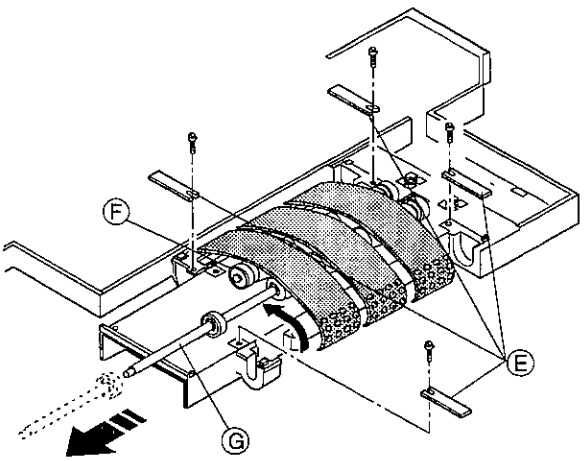


③ Remove the alignment plates F and R Ⓐ. (one screw for each)

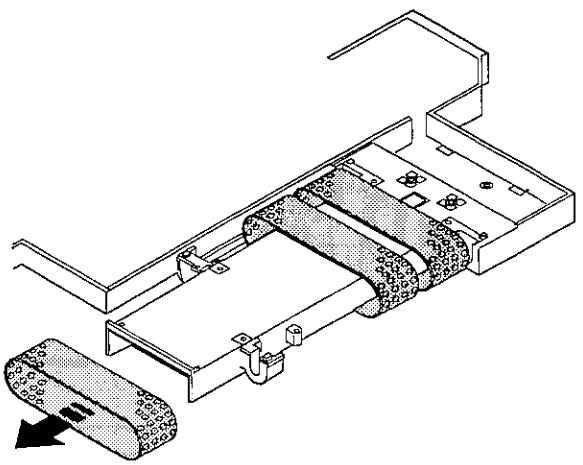
④ Remove the paper exit plates F and R Ⓑ. (one screw for each)

⑤ Remove the fixing screws of the suction duct Ⓒ and the duct holding plate Ⓓ. (3 screws)

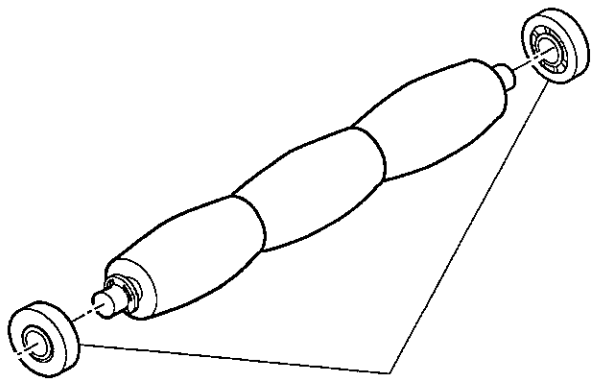
⑥ Remove the bearing holder Ⓔ and remove the paper feed follower shaft Ⓕ and the paper fed drive shaft Ⓖ. (4 screws)




⑦ Remove the paper feed belt.



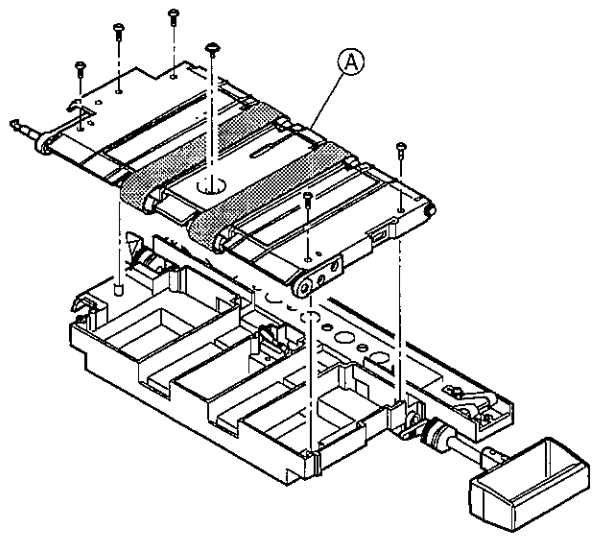
✳ When attaching the paper feed bearing, be careful to the installing direction.



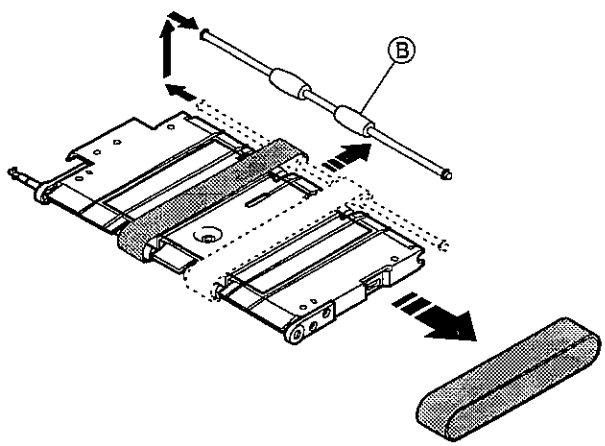
### (4) Suction belt removal

① Reverse the suction unit.

② Remove the suction PG Ⓐ. (5 screws)




③ Remove the belt drive shaft Ⓑ and remove the suction belt.

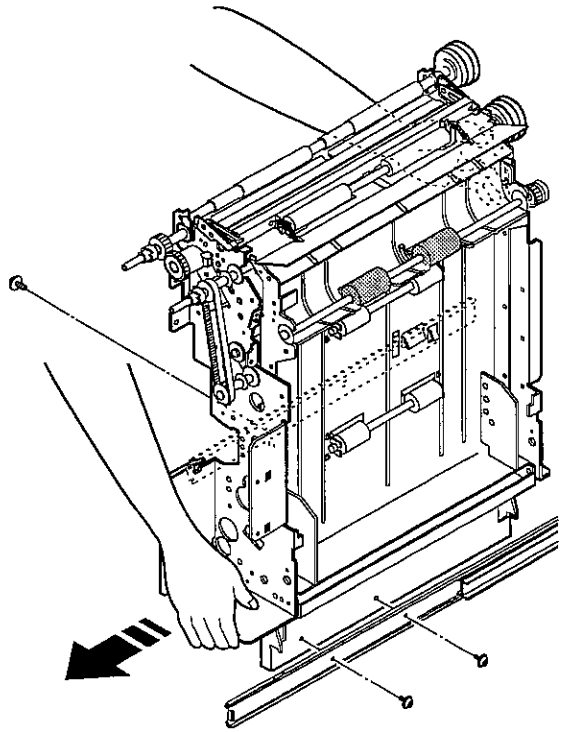



## 13. Transport unit

### (1) Transport unit removal

① Remove the duplex copy tray unit. (Refer to 3. Duplex tray unit.)

② Remove the transport unit. (3 screws)

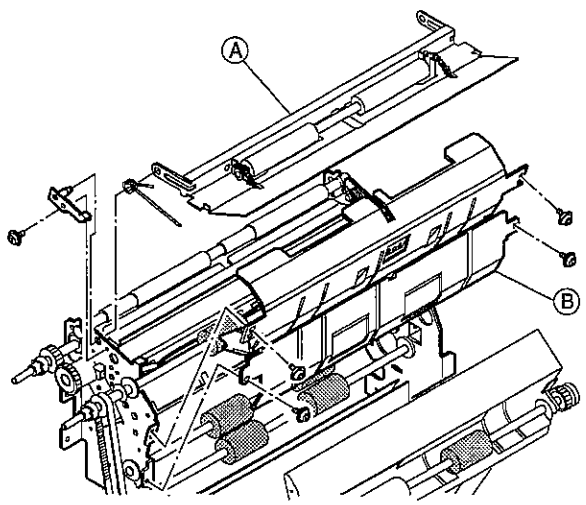


### (2) Blower duct unit removal

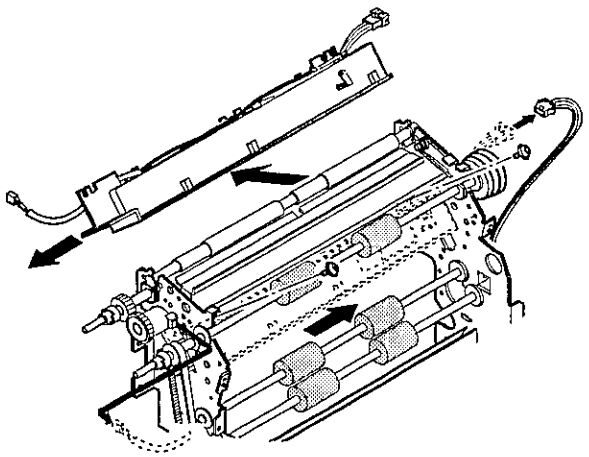
① Remove the duplex copy tray unit.

② Remove the transport paper guide Ⓐ. (1 screw)

③ Remove the transport paper guide B and C Ⓑ. (4 screws)

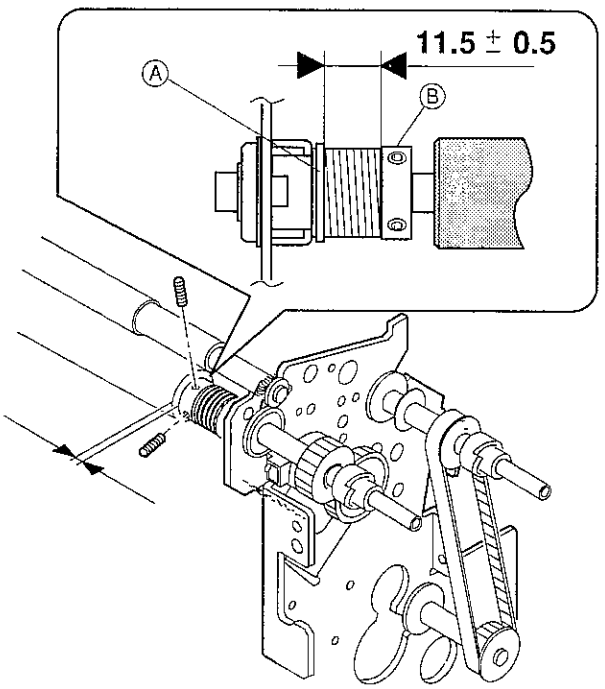


④ Remove the duct solenoid. (2 screws, 7 connectors)



⑤ Remove the suction duct unit. (2 screws, 2 connectors)

✳ Keep the clearance between brake collar Ⓐ and brake adjustment collar Ⓑ to 11.5 mm +-0.5.




# 14. Process unit

## (1) Cleaner unit removal

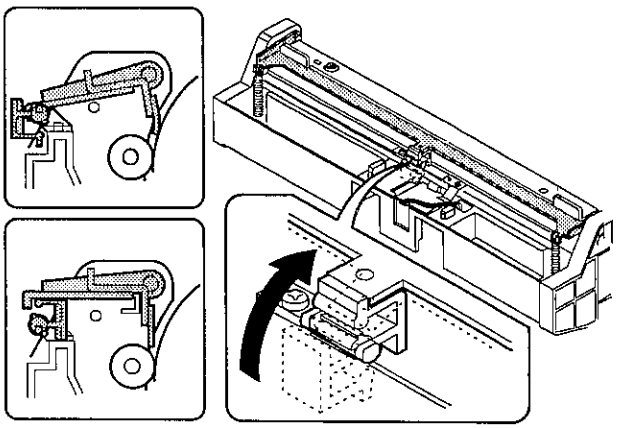
① Open the front cabinet (left and right).

② Remove the developer unit.

③ Turn the transport section open/close lever clockwise to release pressure contact with the process unit.

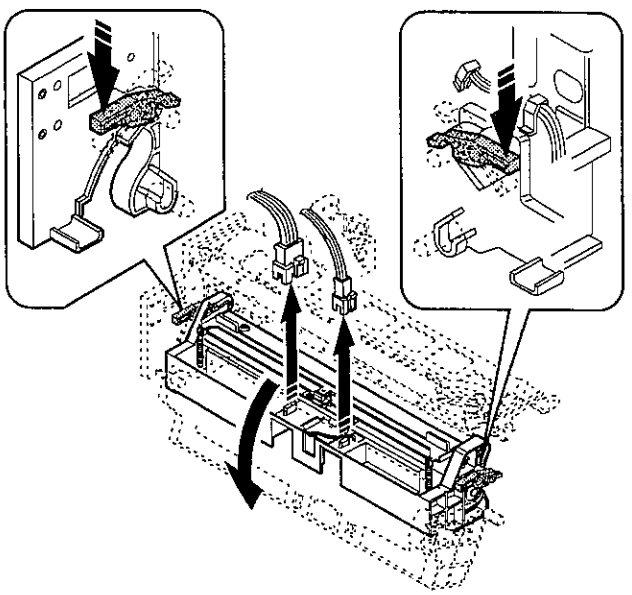
④ Loosen the process unit fixing screws (2 pcs.) and pull out the process unit.

⑤ Release the pressure of the cleaning blade.



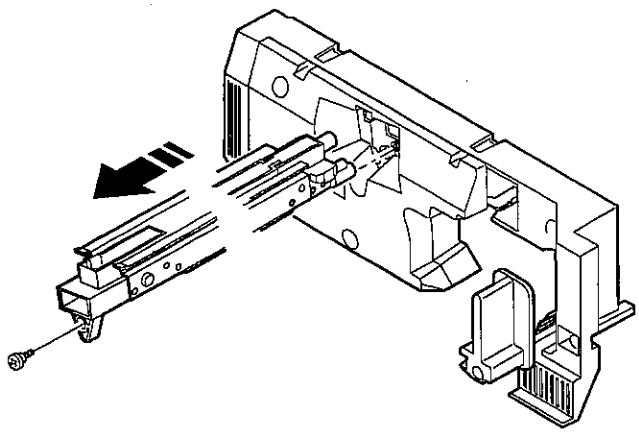
⑥ Disconnect the process control sensor connector (4 pin) and the process separation pawl drive solenoid connector (3 pin).

⑦ Release locking of the cleaner unit (front and rear). Turn the cleaner unit to the fuser side and remove the cleaner unit from the process unit.

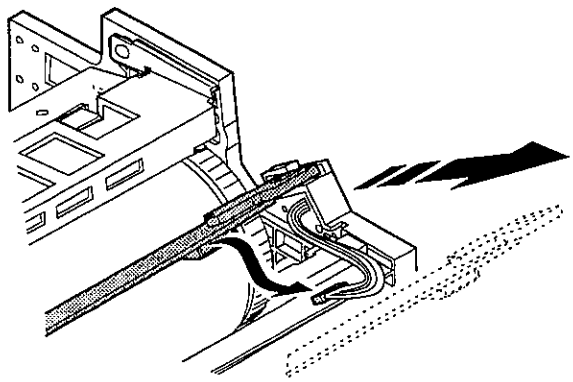


## (2) Photoconductor drum removal

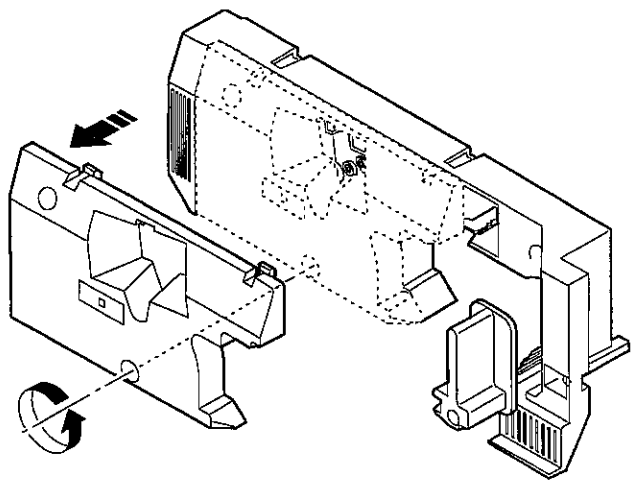
① Remove the main charger unit. (1 screw)



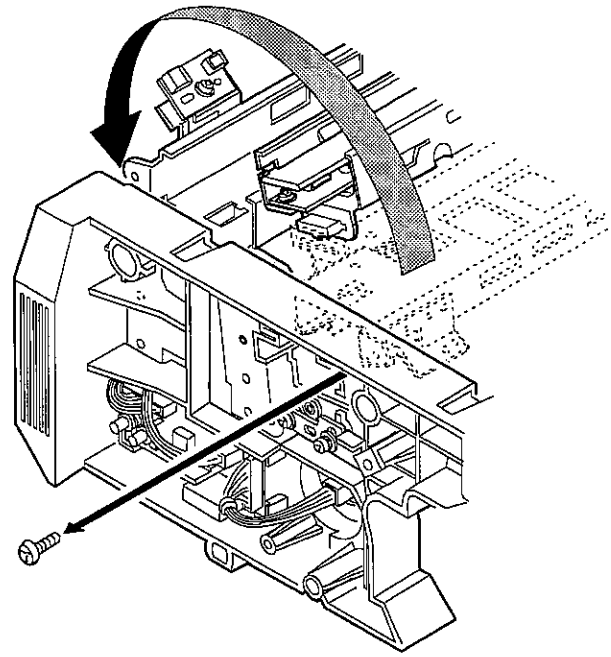
② Remove the blank lamp (BL) unit. (7 pin connector)



③ Remove the process unit front cover. (1 screw)

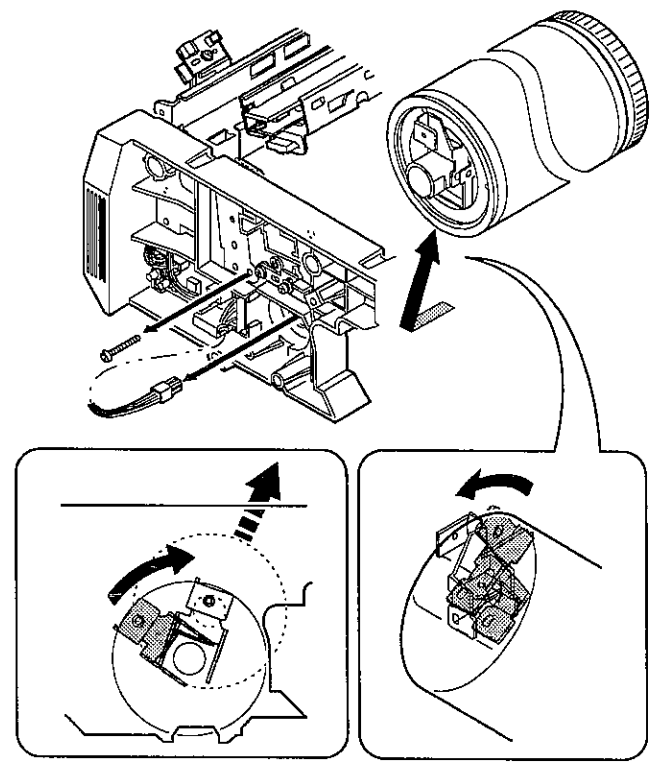


④ Remove the fixing screw (1 pc.) of the main charger guide, and rotate the guide to allow removal of the photoconductor drum.



⑤ Remove the drum flange fixing screw (1 pc.). (4 pin connector)

⑥ Rotate the photoconductor drum and remove it from the process unit.



### (3) Pre-transfer discharge charger (PTC) removal

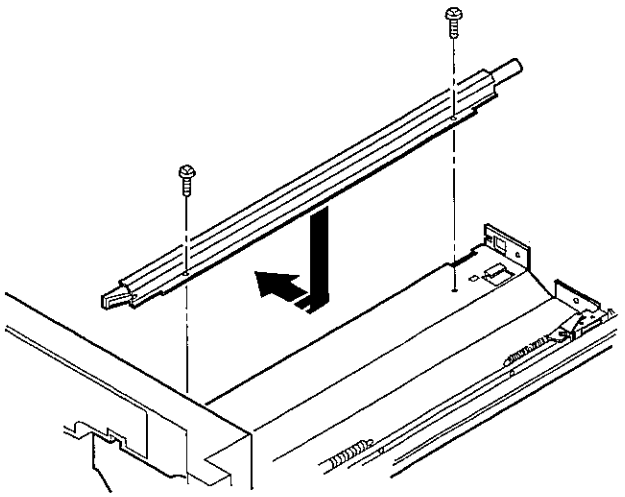
① Remove the developer unit.

② Rotate the transport open/close lever clockwise to release pressure contact with the process unit.

③ Loosen the process unit fixing screws (2 pcs.) and pull out the process unit.

④ Remove the blank lamp (BL) unit. (7 pin connector)

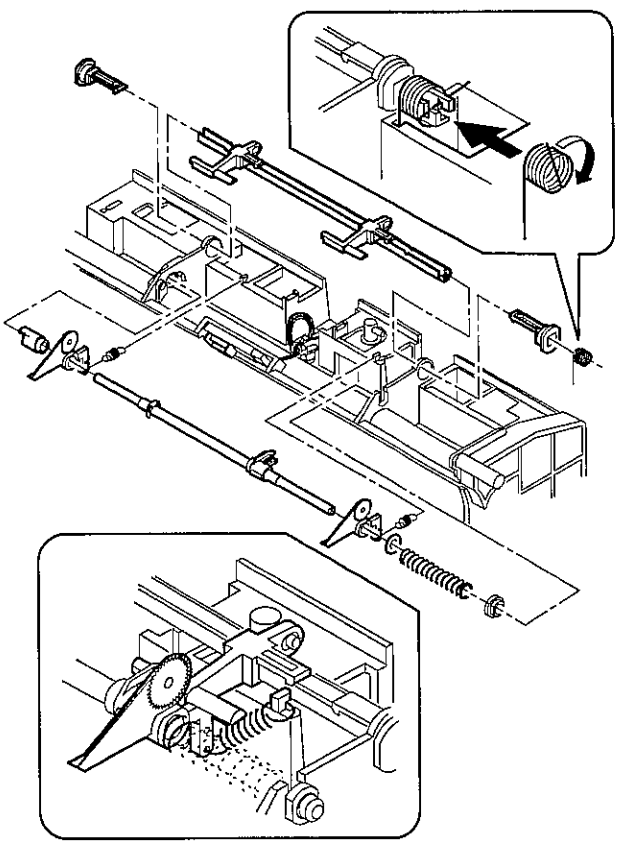
⑤ Remove the pre-transfer discharge charger (PTC) unit. (2 screws)



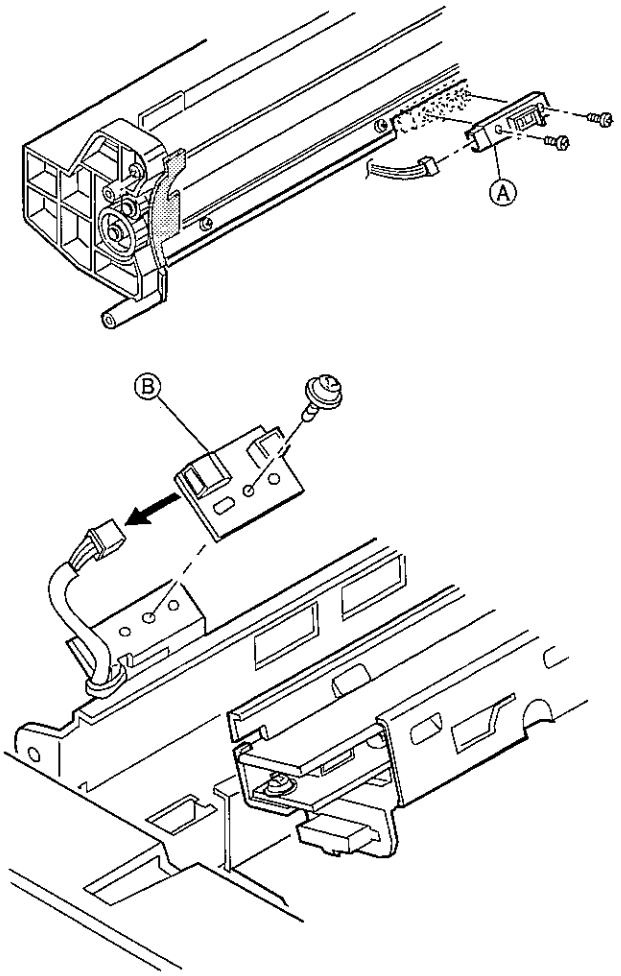
* When attaching the PTC unit, press it to the photoconductor side and fix with fixing screws.

### (4) Note on cleaner unit

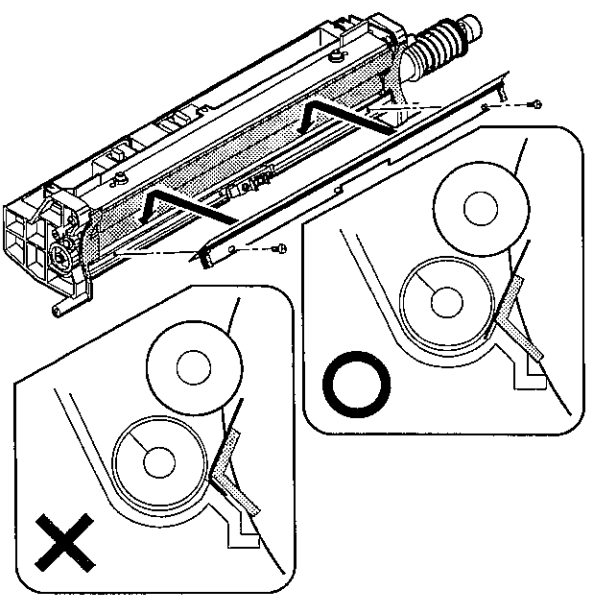
① Process separation pawl
Check the operation of the separation pawl oscillation mechanism.



② Clean the surface of the process control sensor Ⓐ and the drum marking sensor Ⓑ with an air brush or soft cloth.



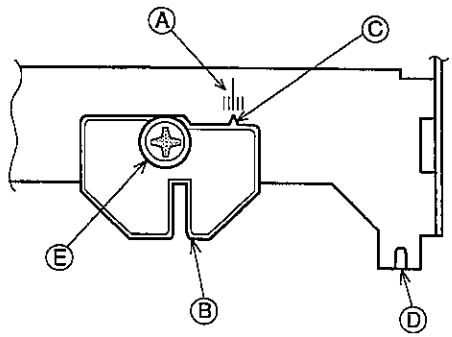

③ Cleaner unit toner reception seal attachment
Insert the seal lower section into the main body base from the arrow direction and fix it with screws (2 pcs.).



④ Cleaning blade
The cleaning blade is fixed with two blue screws.
(Note) When removing or attaching the blade, be sure to release the blade pressure.

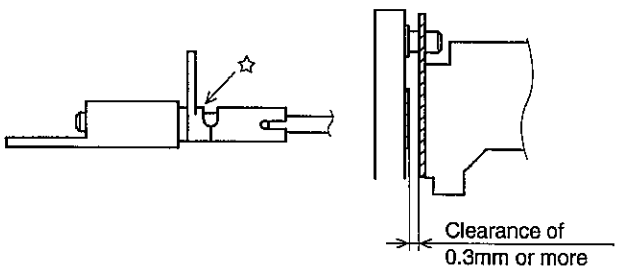
⑤ Blade oscillating mechanism adjustment

A. Fit the projection Ⓐ of the CL oscillating plate Ⓑ with the center of the scale Ⓒ on the blade mounting plate Ⓓ, and fix the CL oscillating plate Ⓑ with the red screw Ⓔ.

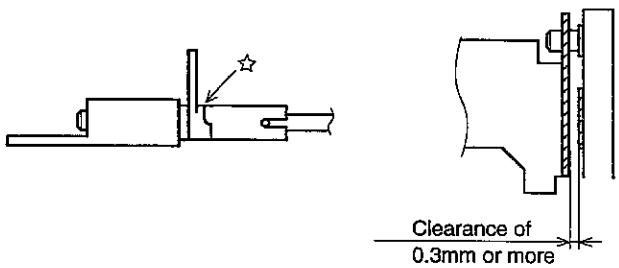



B. After completion of the oscillating mechanism assembly, check the following items ⓐ and ⓑ. If either ⓐ or ⓑ is not satisfied, adjust the blade oscillating plate fixing position so that both ⓐ and ⓑ are satisfied.

ⓐ Move the CL oscillating arm manually to shift the blade mounting plate to the nearest position to the rear frame. Then check that the clearance between the blade mounting plate in the rear side and the cleaner support plate is 0.3mm or more.
(The thickness gauge of 0.3mm can be inserted smoothly.)



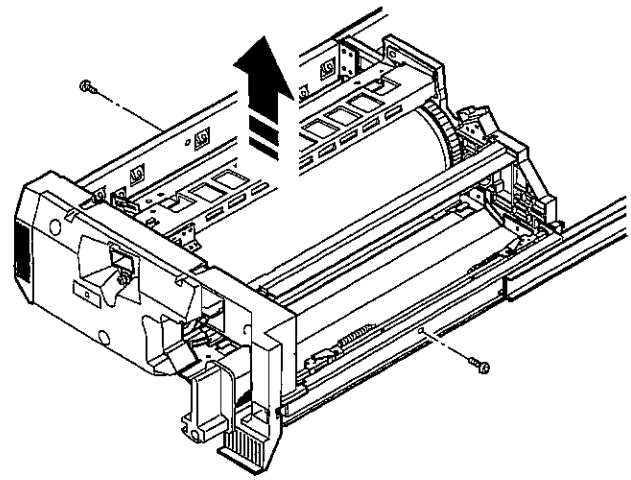

ⓑ Move the CL oscillating arm manually to shift the blade mounting plate to the nearest position to the front frame. The check that the clearance between the blade mounting plate in the front frame side and the cleaner support plate is 0.3mm or more.
(The thickness gauge of 0.3mm can be inserted smoothly.)




## (5) Process unit removal

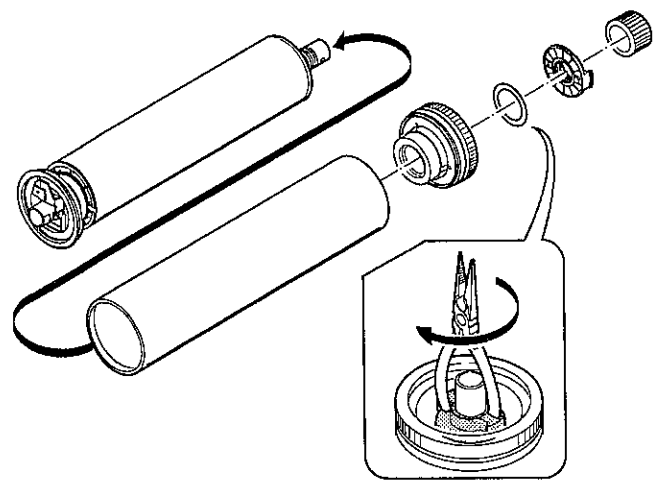
① Remove the process unit fixing screws (1 pc. in the right and 1 pc. in the left side).

② Hold the process unit front and rear frame, and remove the process unit from the rail upwards.



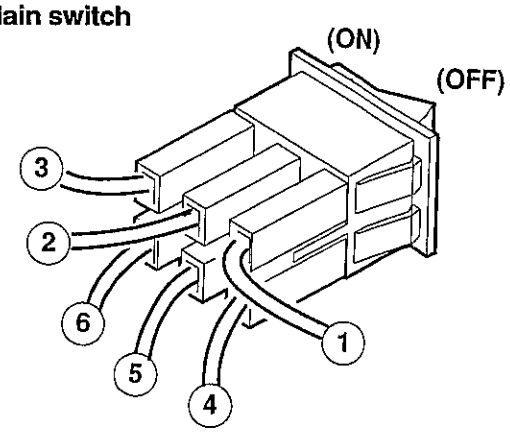
## (6) Photoconductor drum handling

① Photoconductor drum removal
Loosen the drum flange fixing nut with pliers. When attaching the photoconductor drum, place the drum marker section in the front frame side.
(Note) Since the drum flange diameter in the front side is different from that in the rear side, it cannot be installed reversely.



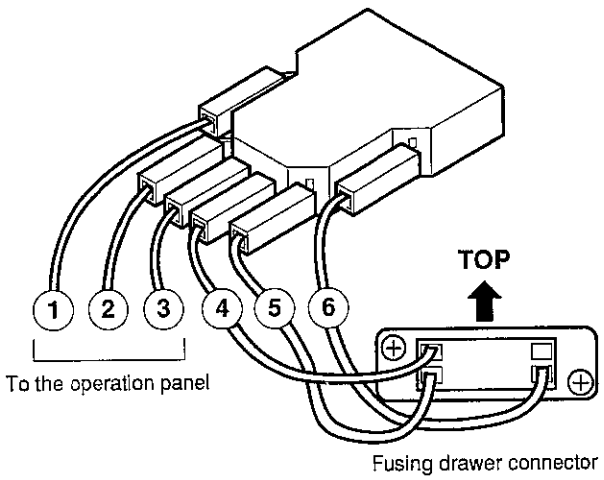
## 15. Major harnesses

### (1) Main switch



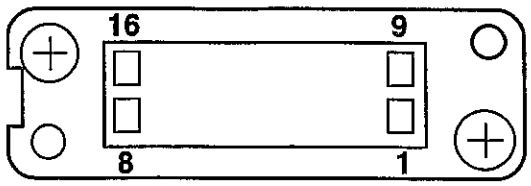

| No. | Connector | Harness color |
|---|---|---|
| ① | White | White |
| ② | Blue | White |
| ③ | Yellow | White |
| ④ | White | Black |
| ⑤ | Blue | Black |
| ⑥ | Yellow | Black |

### (2) Interlock switch (Fusing section)



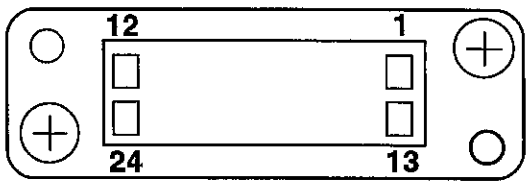

| No. | Connector color | Harness color |
|---|---|---|
| ① | White | Black |
| ② | Yellow | White |
| ③ | Blue | White |
| ④ | Blue | White |
| ⑥ | Yellow | White |
| ⑦ | White | Black |

### (4) Fusi ng drawer connector (When viewed from the rear frame side)



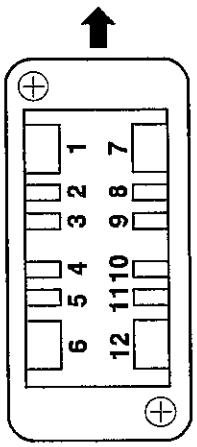

| No. | Harness color |
|---|---|
| 1 | Black |
| 8 | White |
| 9 | Yellow/Green |
| 16 | White |

### (5) The second and third paper feed tray drawer connectors (when viewed from the rear frame)



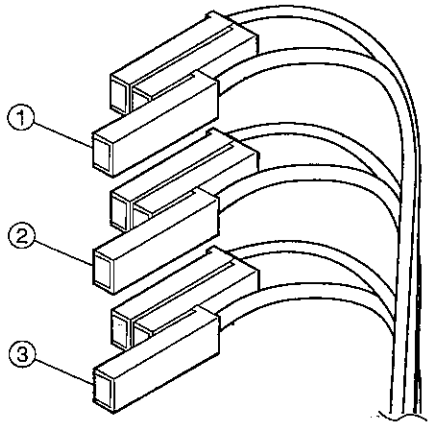

| No. | Harness color |
|---|---|
| 1 | Orange |
| 12 | — |
| 13 | Gray |
| 24 | Gray (GND) |

### (6) The first paper feed tray drawer connector (when viewed from the rear frame)




| No. | Harness color |
|---|---|
| 1 | Orange |
| 6 | — |
| 7 | Gray |
| 12 | Gray (GND) |

## (7) Rear frame triple microswitch finisher section




| | Connector color | Content |
|---|---|---|
| ① | Yellow | FSS: Finisher installation sensor |
| ② | Blue | +38V |
| ③ | White | +24V |

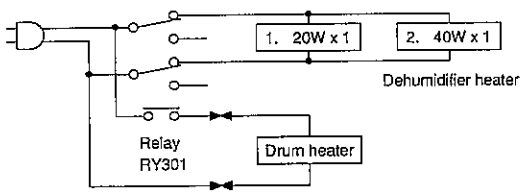
### (Dry heater)

The dry heaters are located in the optical section, the transport section, and the process section.

**1. Conduction conditions**

| Main SW | OFF | ON |
|---|---|---|
| Optical section | Conduction | — |
| Transport section | Conduction | Conducts in synchronization with the process section heater. |
| Process section | Conduction | The thermistor in the drum heater selects automatically. |

**2. Circuit**




**3. Resistance**

| Mounting position and Watt / Set voltage (V) | 1. Optical unit No. 4/5 mirror section 20W × 1 | 2. Optical unit No. 2/3 mirror section 40W × 1 |
|---|---|---|
| 100 | 1K | 600 |
| 110 | 1.2K | 750 |
| 120 | 1.35K | 910 |
| 127 | 1.6K | 1K |
| 220 | 4.7K | 3K |
| 240 | 5.6K | 3.6K |

**4. Simple measuring method (Connect a tester across the plug terminals of the AC cord.)**

| Set voltage (V) | Composed resistance (Ω) |
|---|---|
| 100 | 158.33 ~ 175.0 |
| 110 | 438.46 ~ 484.62 |
| 120 | 516.40 ~ 570.76 |
| 127 | 584.62 ~ 646.15 |
| 220 | 1739.61 ~ 1922.73 |
| 240 | 2081.74 ~ 2300.87 |

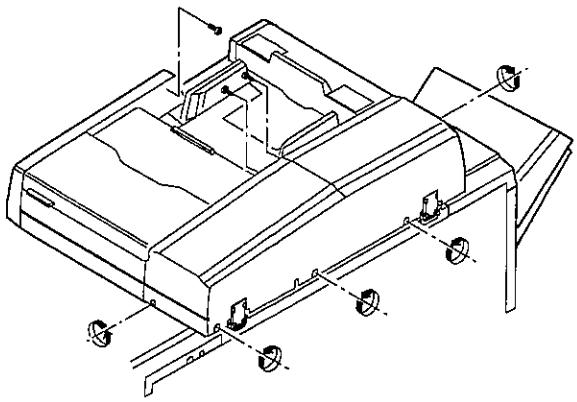
**Measurement conditions**

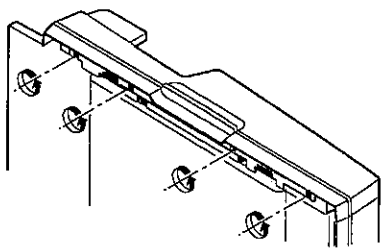
1) The main SW is OFF.
2) The process unit is not install.

# 17. UDH

## (1) UDH cabinet removal

① Front cabinet (5 screws)
Rear cabinet (7 screws)





## (2) Transport belt unit

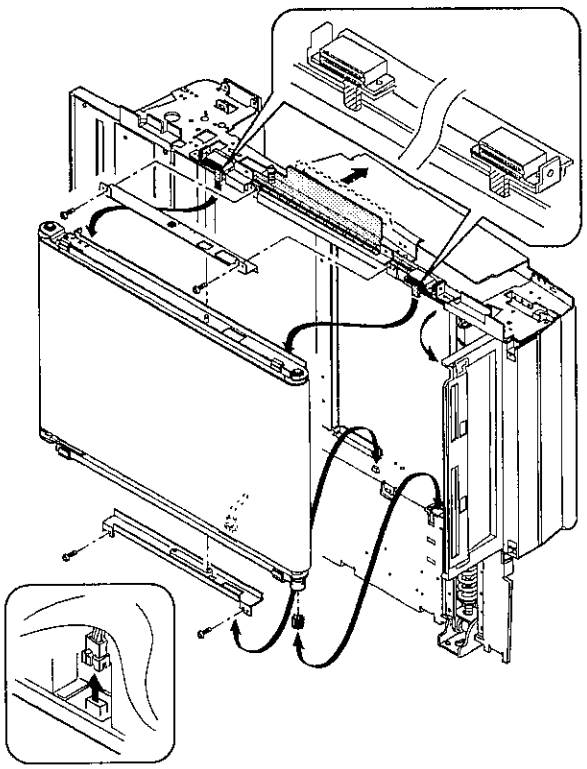
- **Disassembly from the UDH body**

① Remove the transport belt unit fixing screws (4 pcs.).

② Pull the UDH open/close lever, and remove the transport belt unit fall preventing plate from the frame.

③ Remove the 3 pin connector of the document transport belt holding roller lift-up solenoid (URLSOL).

④ Remove the transport belt unit.
(When assembling the transport belt unit, insert the belt drive roller coupling gear (orange) into the coupling in the belt unit side.



**Note for assembly**

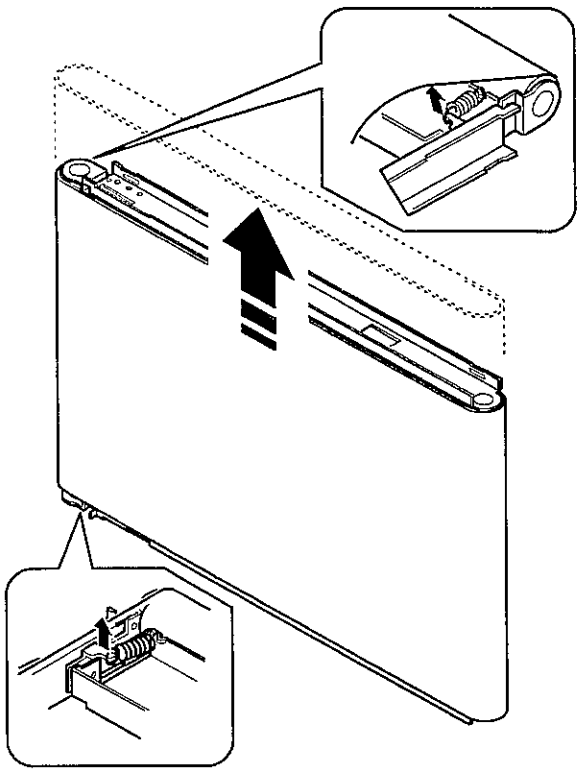
① Fit the coupling first. (Push it while turning the belt slightly.)

② Put the rear side of the bed frame unit on the rear frame.

③ Push the UDH open/close lever, hang the front frame side on the ▨ section.

- **Transport belt disassembly**

① Remove the front and the rear tension springs from the hooks, and remove the transport belt.

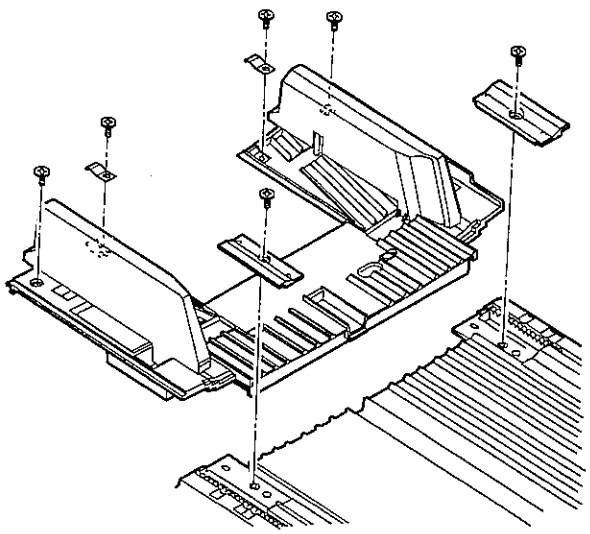


② Attach the document transport belt holding roller lift-up solenoid (URLSOL) so that the holding roller lift-up amount is 2±0.5mm when the solenoid is ON (the plunger is pulled).

## (3) document guide unit

- **Disassembly from the UDH body**

① Remove the document guide fixing screws (6 pcs.).



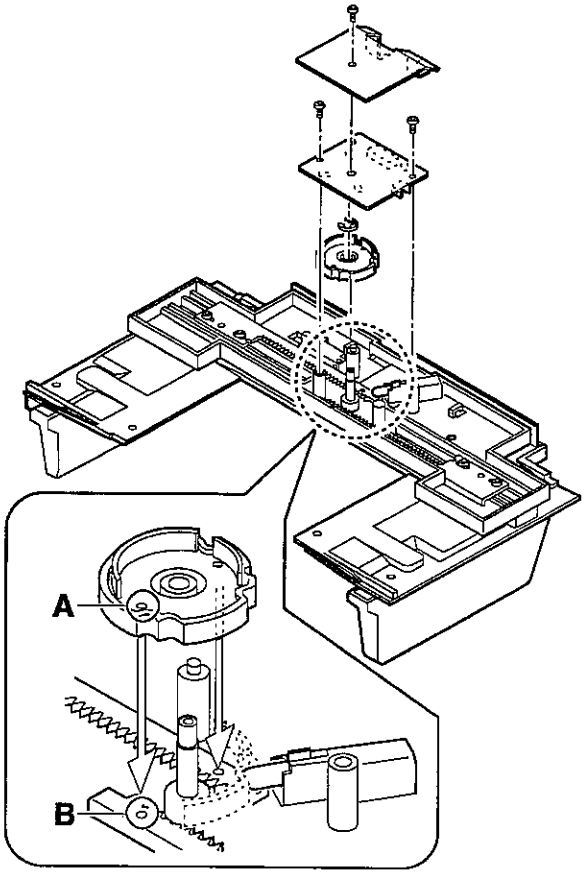
- **Document width sensor mechanism assembly**

① Extend the document width to the max. (Check that each rack gear hole is at the center.)

② The hole in the size sensor light shielding plate is at the same position with the hole in the rack gear.

③ Attach the size PWB. (2 screws)

④ Attach the PWB cover. (1 screw)

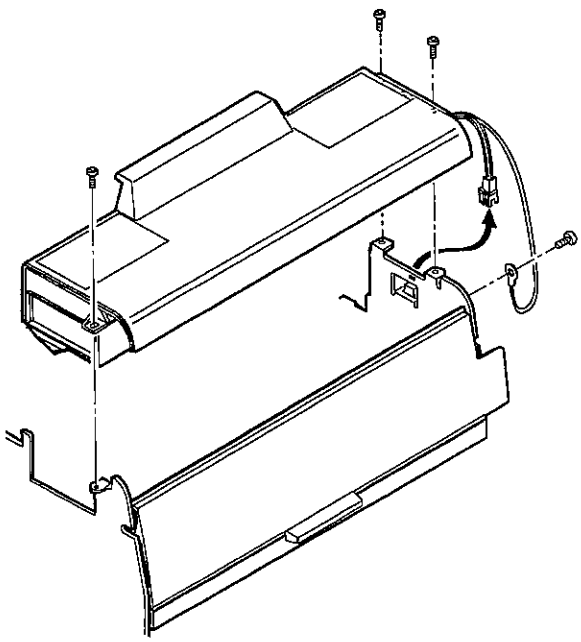



## (4) Suction belt unit

**• Disassembly from the UDH body**

① Remove the document guide unit and the transport belt unit.

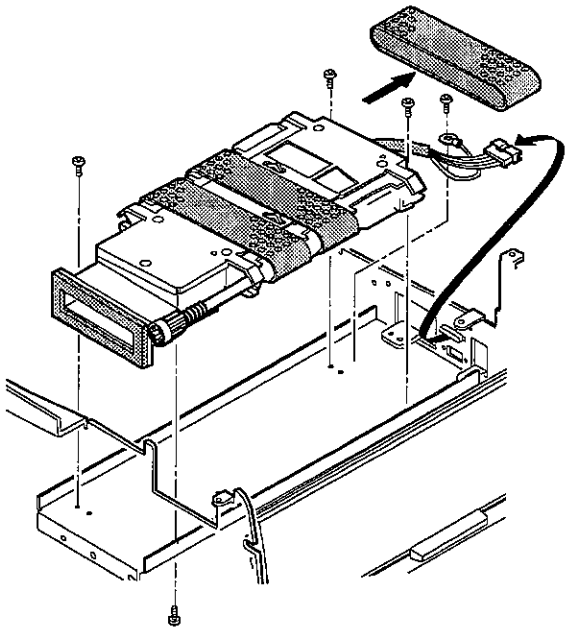
② Remove the air blow duct.
(3 screws, a 2-pin connector, a grounding harness)



③ Remove the suction belt. (4 screws: one of them is in the belt unit side, a 6-pin connector, a grounding harness)

**• Suction belt disassembly**

Remove the belt from the suction unit front frame side.



When attaching the suction belt, rotate the drive shaft several times to eliminate twist in the belt.

## (5) Air blow duct unit

① Remove the air blow duct unit fixing screws (3 pcs.).

② Remove the 2-pin connector of the document stopper gate solenoid (USGSOL).
Remove the grounding harness from the frame. (1 screw)

- **Air blow duct disassembly**

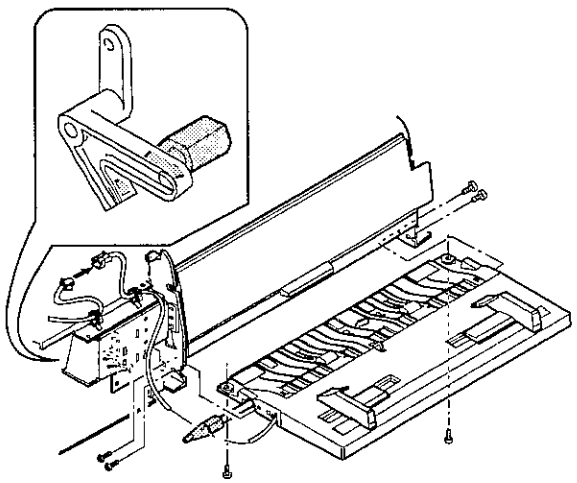
① Remove the air blow duct fixing screws. (4 screws)
(No adjustment required for the document stopper gate solenoid (USGSOL) position.)

## (6) Document manual feed unit

- **Disassembly from the UDH body**

① Remove the document manual feed unit fixing screws. (6 screws)

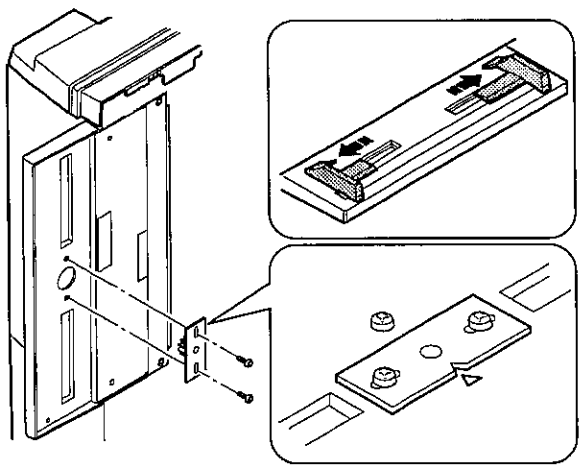
② Remove the manual feed section document sensor (UHFD) 3-pin connector.



When attaching the document manual feed unit, be careful of the rotating arm of the document manual feed gate solenoid (UHGSOL).

- **Manual feed regulating plate assembly**

① Open the manual feed regulating plates (F and R) to the maximum position and attach the pinion gear.
Align the "V" marking of the manual feed paper guide with the manual feed pinion gear mounting plate, and secure them with screws.



## (7) Paper exit open/close unit

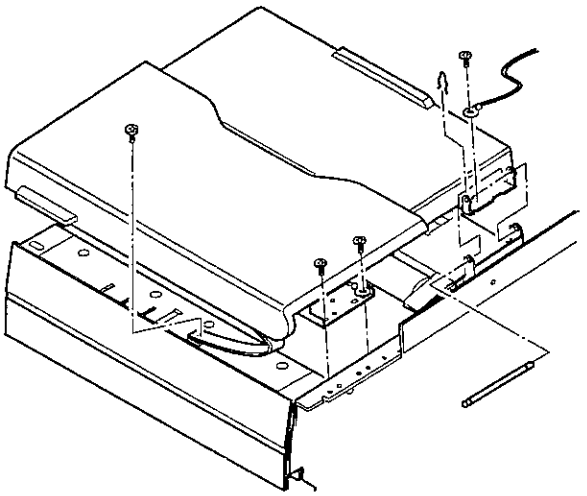
- **Disassembly from the UDH body**

① Remove the paper exit open/close regulating band mounting screw. (1 screw)

② Remove the open/close unit mounting plate fixing screws. (2 screws)

③ Remove the open/close shaft from the open/close mounting plate (in the paper exit side). (1 pin)

④ Remove the grounding harness fixing screw.



When assembling the paper exit open/close unit, note the following:

- Attach the shifting paper exit follower rollers (F and R) so that the smaller outside diameter comes outside.
(The shifting paper exit unit is locked with the lock lever when disassembling the paper exit open/close unit.)

## (8) Shifting paper exit unit

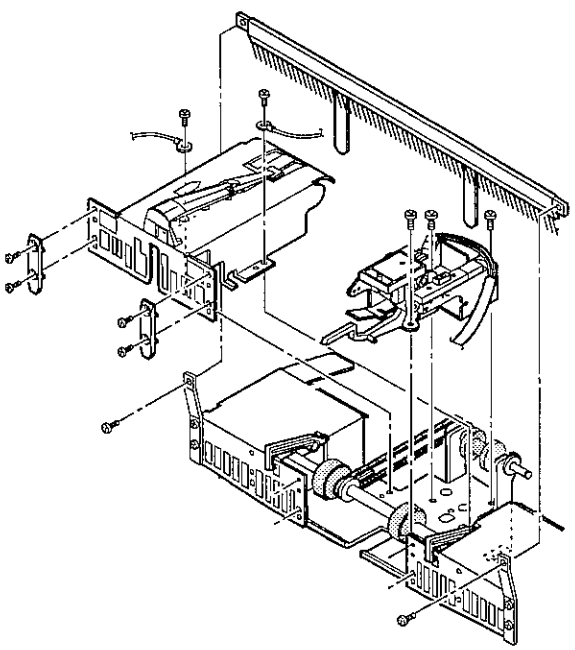
- **Document circulation detection unit disassembly**

① Remove the shifting rear plate mounting screws. (2 screws × 2)

② Remove the paper exit discharge brush. (2 screws)

③ Remove the document circulation detecting unit cover (shifting unit paper guide lower) fixing screws. (2 screws)

④ Remove the document circulation detecting unit mounting screw. (4 screws)



- **Disassembly from the body**

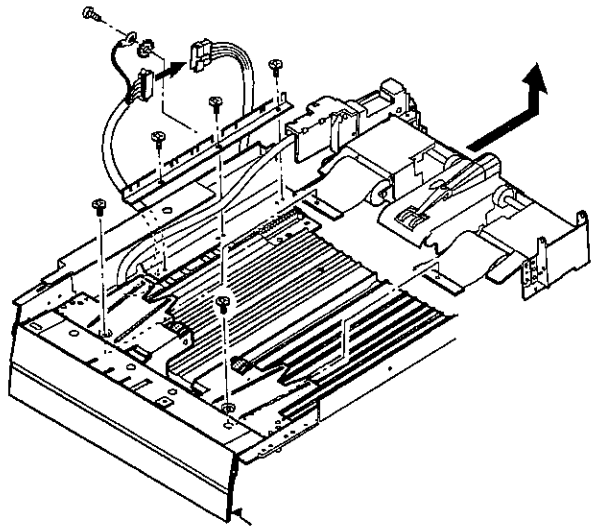
① Remove the paper exit open/close unit.

② Remove the document length latch plate. (3 screws)

③ Remove the shifting mylar paper guide fixing step-screws. (1 in the front, 1 in the rear)

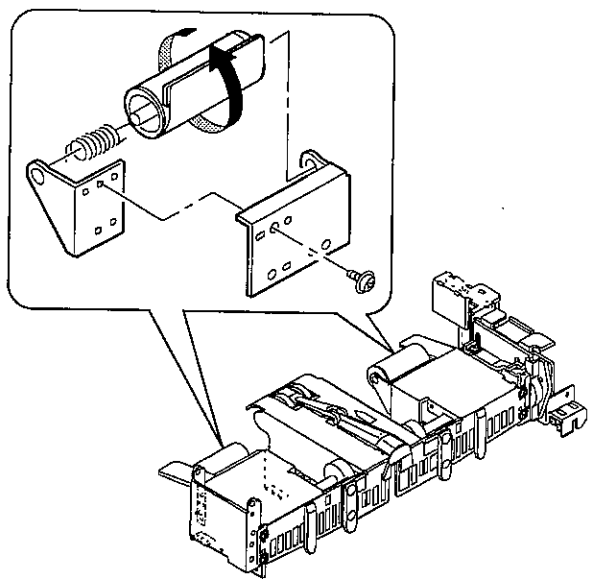
④ Remove the front frame shifting unit main harness (20 pin) connector and the grounding harness. (1 screw)

⑤ Pull and remove the shifting unit in the direction of paper feed unit.



- **Shifting mylar paper guide assembly**

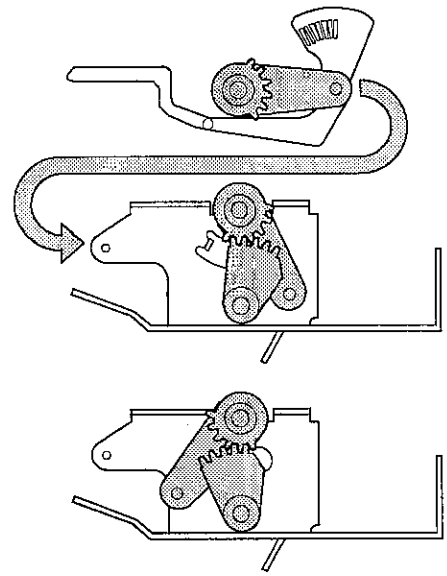
Insert the shifting mylar paper guide spring into the shifting mylar paper guide drum and attach the spring hook on the mounting plate and rotate the drum two rotations.
While in this condition, assemble the sub mounting plate and the shifting mylar paper guide mounting plate. (1 screw)



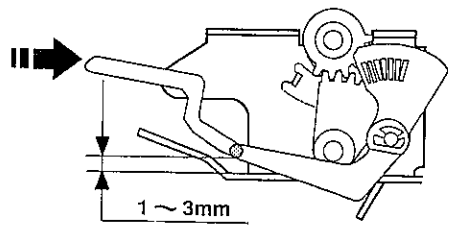
If there is any slack in the shifting mylar, rotate the drum once more to remove slack.

## (9) Document recirculation detecting unit assembly

Insert recirculation detecting arm Ⓐ into arm holding plate Ⓑ.
At that time, assembly so that the gear (6 teeth) of arm holding plate Ⓑ covers the gear (5 teeth) of drive arm Ⓒ completely as shown blow:



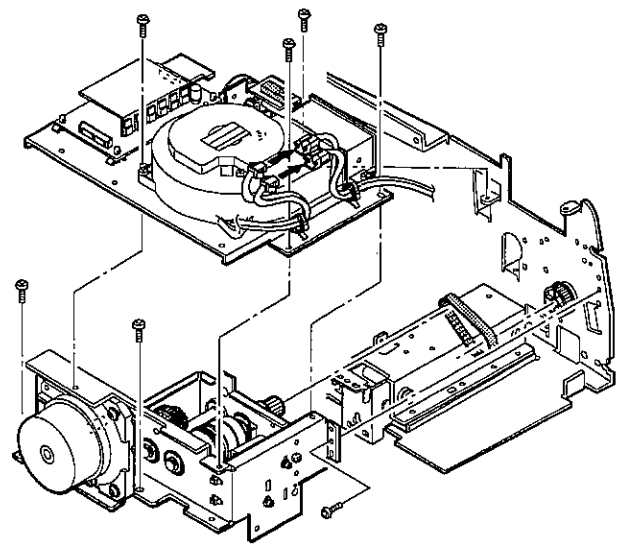
Adjust the solenoid installing position so that the clearance between the recirculation detecting arm and the pin section is 1 ~ 3mm (by visual inspection) when the recirculation detecting solenoid is manually turned ON.




## (10) Paper feed drive unit

① Remove the air blow fan unit. (4 screws, 2 connectors) (5 connectors)

② Remove the paper feed drive unit. (3 screws)

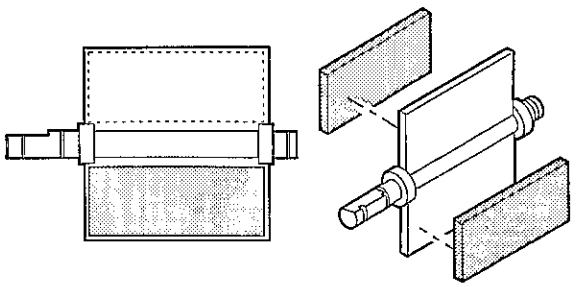


**(Document feed clutch assembly)**

Tighten the clutch fixing screw so that the clearance between the clutch stop and the frame is 0.5mm or less.

### (11) Suction valve assembly

When the D cut surface of the suction valve shaft is placed in the left, attach the valve seal to the lower side of the valve surface and to the upper side of the back surface of the valve as shown below. Neatly attach the seals without extending from the surface.

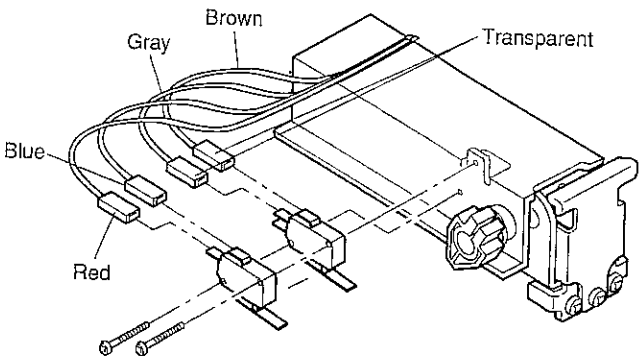


Valve movable arm mounting position

### (12) Jam process detecting switch (UJRSW1) assembly

**Open/close detecting switch (UDSW1)**

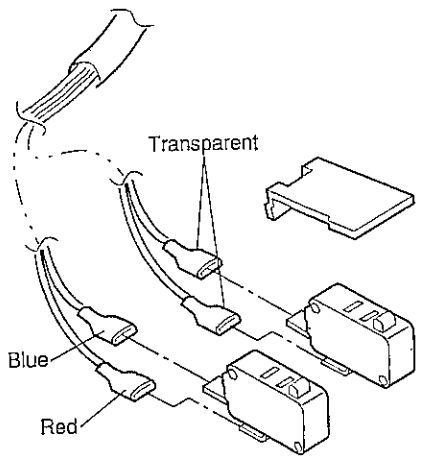
The harnesses of the connectors are identified with the sleeve colors.



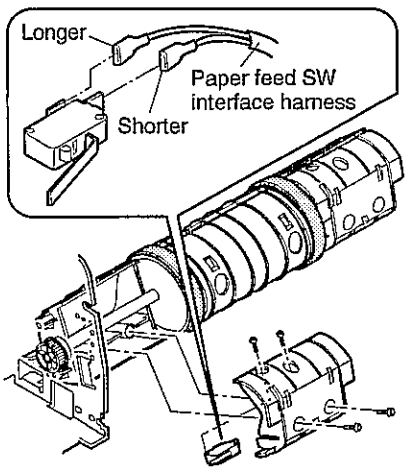

### (13) Jam process detecting switch (UJRSW2) assembly

**Open/close detecting switch (UDSW3)**

The harness of the switches are identified with the sleeve colors.




### (14) Document feed section cover open/close detecting switch (UDSW2) assembly

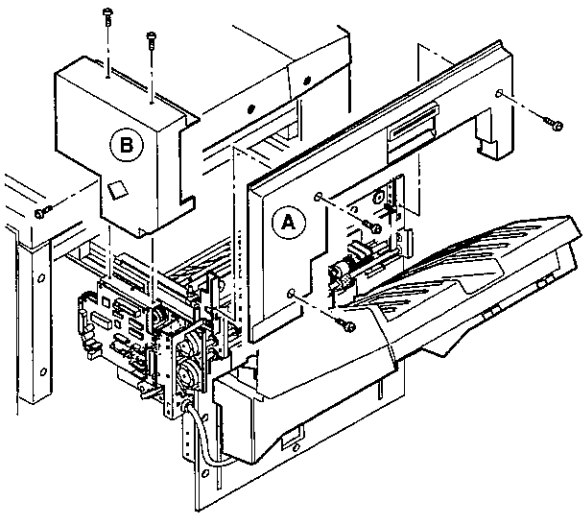



## 18. Finisher unit

### (1) External cover disassembly

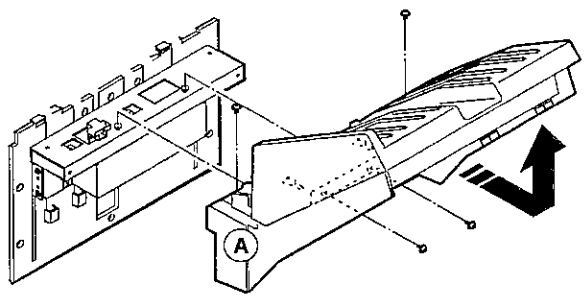
① Remove paper exit section cover Ⓐ. (3 screws)

② Remove control PWB cover Ⓑ. (3 screws)




### (2) Paper exit offset tray unit

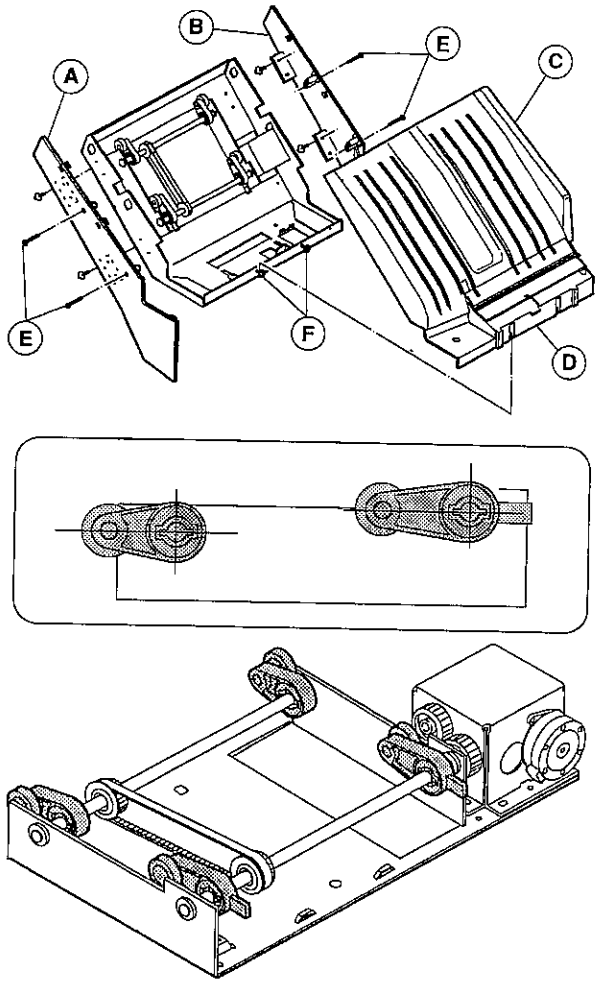
① Remove paper exit offset tray unit (A) from the finisher body. (4 screws)




② Remove four screws Ⓔ.
Remove two screws Ⓕ.
Lift the whole unit of movable trays A/B/C/D, and slide it towards F, and remove.

✳ No need to remove side plates Ⓐ, Ⓑ.

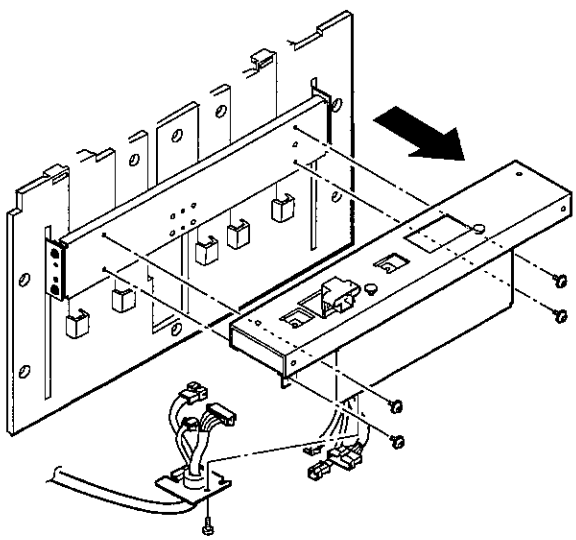
③ Tray arms A and B assembly
When attaching the drive belt to tray arms A and B, set tray arms A and B at the same angle as shown in the figure.




## (3) Paper exit offset tray shift unit

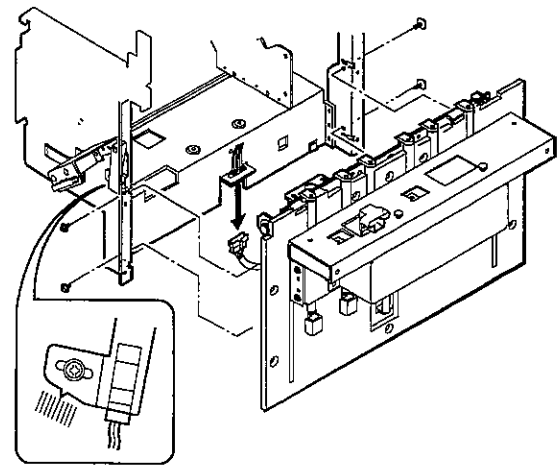
① Remove the tray shift unit from the elevator unit.

② Remove three connectors. (Harness mounting plate, one screw)

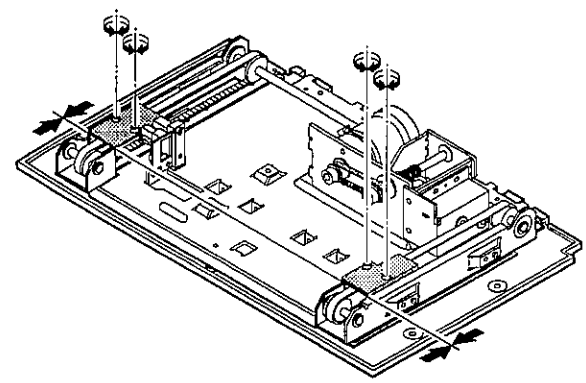


## (4) Elevator unit

① Remove the elevator unit from the finisher body. (8 screws, 8-pin connector)
When removing the rear frame (upper) mounting screw, shift the tray upper limit sensor to facilitate removal.
After assembly, however, the tray upper limit sensor detecting position must be adjusted.

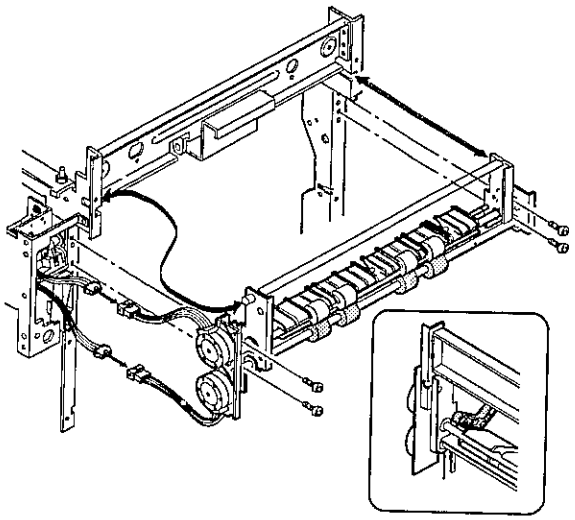


② Elevator roller frames (F and R) assembly
Fix the elevator roller frames (F and R) on the extended line of the upper bent portion of the elevator roller frames (F and R).
Tighten each belt holder with tow screws and fix to the drive belt.



## (5) Game frame unit

① Remove the gate frame unit from the finisher unit. (4 screws, two 4-pin connectors for paper exit motors 1, 2)
When assembling, the mode select gate shaft must be under the gate rotating arm.



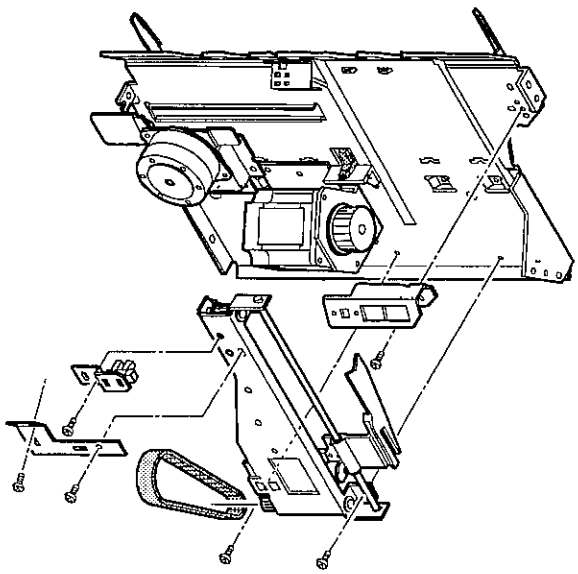
## (6) Pusher unit

① Remove the paper sensor (FJPD) lighting section mounting plate from the stale tray. (1 screw)

② Remove the pusher upper limit sensor (FPOHS) mounting plate from the pusher frame. (1 screw)

③ Remove the two fixing screws of the paper exit sensor harness mounting plate.

④ Remove the pusher unit from the staple tray. (2 screws)

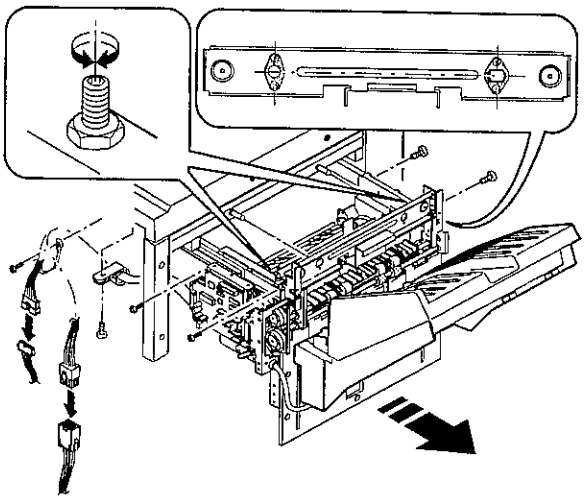


## (7) Installing the finisher to the copier

① Pull out the accurides (F/R) from the duplicator.

② Set the finisher on the accurides.

③ Slowly insert the finisher into the copier.
Check the contact position of the finisher and its positioning boss (rear).
If the contact is uneven, adjust with the allen screw to make even contact with the boss.



# [6] ADJUSTMENTS


1. Developer section adjustments
   (1) Developer doctor clearance adjustment
   (2) Developer magnet roller main pole position adjustment
   (3) DV bias voltage adjustment
   (4) Note for installation of developer unit rollers
   (5) Thrust clearance adjustment
   (6) Note for attachment of developer side seals F and R
   (7) Note for attachment of developer/ process unit to the main body
2. Optical system adjustments
   (1) Lens reference position adjustment
   (2) No. 4/No. 5 mirror reference position adjustment
   (3) Vertical copy magnification ratio adjustment
   (4) Image resolution adjustment
   (5) Horizontal copy magnification ratio adjustment
   (6) Zoom correction value input (Simulation 48-01A, 48-01C, 48-01E, 48-01F)
   (7) Vertical skew adjustment
   (8) Horizontal skew adjustment
   (9) Center shift adjustment
   (10) Exposure balance adjustment
   (11) Copy lead edge adjustment
   (12) AE sensor adjustment
   (13) Original stopper adjustment
   (14) Clearance adjustment between original stopper and glass.
3. Process section adjustments
   (1) Blank lamp (BL) position adjustment
   (2) High voltage output, balance adjustment
   (3) Note for the high voltage charger unit maintenance
   (4) High altitude countermeasures
4. Operation panel adjustment
   (1) LCD display contrast adjustment
5. Paper feed section adjustment
   (1) Suction/blow air pressure measurement
   (2) Center shift adjustment (Tray 1, 2, 3)
   (3) Tray height adjustment (Tray 2, 3 only)
   (4) Tray parallelism adjustment (Tray 2, 3 only)
   (5) Air paper feed duct solenoid height adjustment
   (6) Note for air paper feed unit assembly
6. Switchback (reverse) unit
   (1) Duplex copy reverse gate solenoid (DGS1, DGS2) position adjustment
7. Waste toner unit section
   (1) Waste toner bottle weight sensor mounting position adjustment
8. Copy picture quality adjustment
   (1) The picture quality adjustment must be performed in the following cases.
   (2) Conditions required for the picture quality adjustment
   (3) Process control
   (4) Exposure adjustment procedure
   (5) Exposure adjustment procedure
9. UDH adjustment
   (1) UDH open/close detection switch (UDSW1) detection timing adjustment
   (2) Original paper feed gate height adjustment
   (3) UDH magnet catch height adjustment
   (4) Suction/blow air pressure measurement
10. Finisher section adjustment
   (1) Pusher pushing amount adjustment
   (2) Mode selection gate falling amount adjustment
   (3) Jogger home position adjustment
   (4) Offset tray upper limit position adjustment
   (5) Offset tray (F/R) height balance adjustment
   (6) Staple tray paper sensor (FJPD) detection level adjustment


## 1. Developer section adjustments

### (1) Developer doctor clearance adjustment

① Remove the four fixing screws securing the toner joint cover, and remove the joint cover

② Remove the four fixing screws securing the DV cover, and remove the DV cover.

③ Remove the three fixing screws securing the DV drive plate. Remove the two fixing screws securing the connector and remove the DV drive plate.

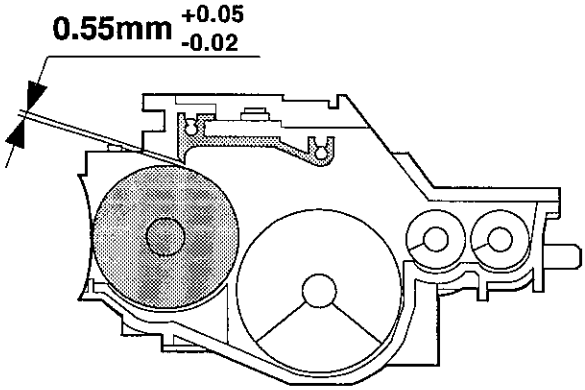
④ Loosen the DV doctor fixing screws Ⓐ. (2 pcs. on the rear frame, and 2 on the front frame)

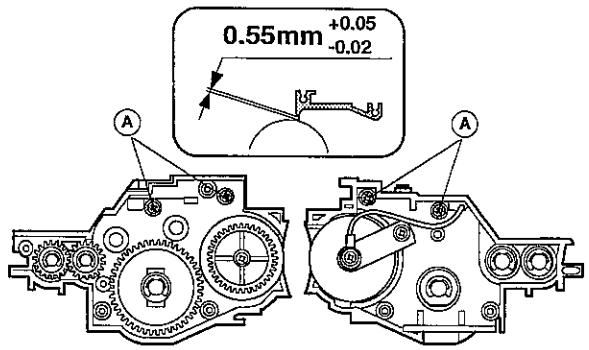
⑤ Insert a thickness gauge of 0.55mm into the doctor gap, 50mm to 80mm from each end of the doctor blade.

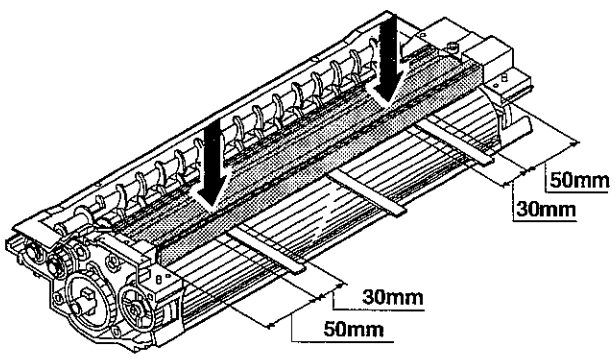
⑥ Push down on the doctor blade in the arrow direction and tighten the DV doctor fixing screw. (Perform this at both the front and the rear frames.)

⑦ Check that there is a clearance of $0.55mm^{+0.05}_{-0.02}$mm at each position 50mm to 80mm from each end of the DV doctor.

※ Note: When inserting the thickness gauge, be careful not to scratch the DV doctor and the MG roller.



## (2) Developer magnet roller main pole position adjustment

① Remove the four fixing screws securing the toner joint cover, and remove the joint cover.

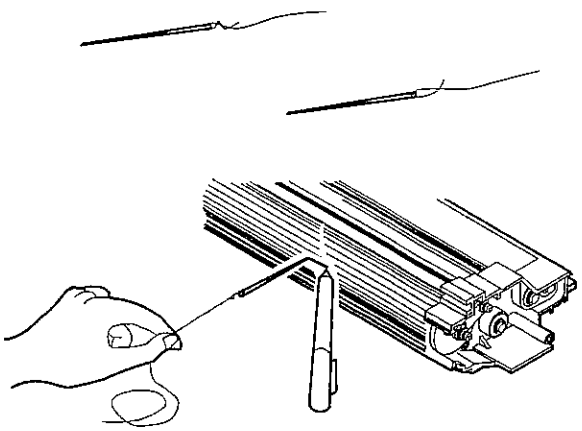
② Remove the four fixing screws securing the DV cover, and remove the DV cover.

③ Tie a thread on a needle as shown in the figure.

④ Hold the thread and move the needle close to the MG roller. (Do not use a clip instead of a needle, because the proper position cannot be detected with a clip due to the small diameter of the MG roller.)

⑤ Mark the position where the needle makes contact with the MG roller surface.

⑥ Measure the distance from the marked position to the developer guide surface and check that the distance is 17.8mm ±0.2mm.
If the distance is not in the above range, loosen the main pole adjustment plate fixing screw Ⓐ, and fix the MG roller adjustment plate to the MG roller with the reverse threaded screw.

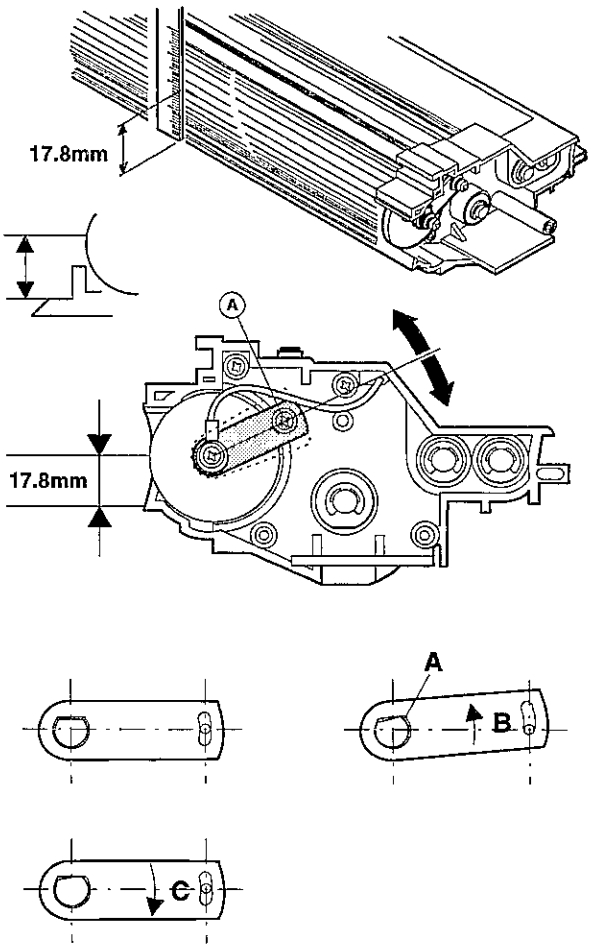


When fixing with the left-hand screw, turn the MG roller shaft counterclockwise. In this case, if there is any unnecessary clearance, make contact at point A on the MG roller adjustment plate and turn the MG roller adjustment plate in the direction of arrow B.

⑦ Make contact at point A and turn the MG roller adjustment plate in the direction of arrow C.

⑧ When driving, the MG roller shaft is under counter-clockwise rotational torque, therefore the main pole is normally adjusted in state ⑥.

⑨ Perform this adjustment only counterclockwise.For readjustment, tighten the left-hand screw, make contact at point A and perform procedure ⑦.



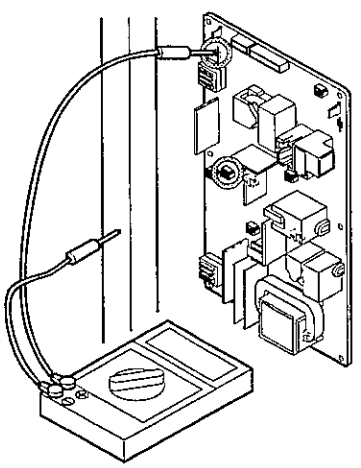

## (3) DV bias voltage adjustment

① Set the digital multi-meter range to DC300V or higher.

② Apply the test probe between the high voltage unit DV bias output check pin (BSCP) and the chassis (GND).

③ Perform simulation 8-1. (The DV bias voltage is supplied for 30 sec.)

④ Adjust the set number of simulation 8-1 so that the output voltage is –200 ±5V.
Adjustment range: 3~56 (–51V~–350V)

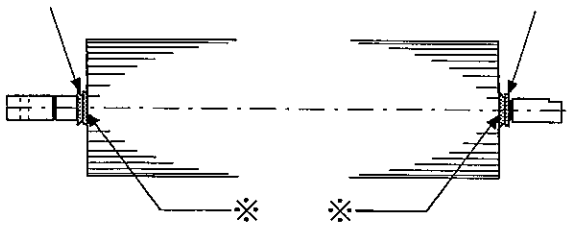


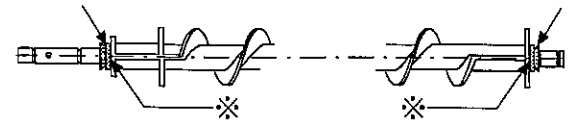
## (4) Note for installation of developer unit rollers

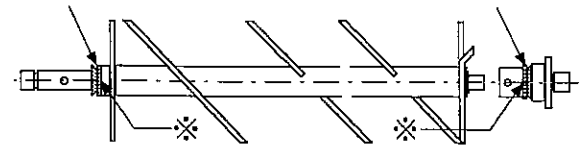
① V-ring installing direction.

② Allow no clearance between the V-ring and the roller and the mark section.

③ Face the engraved side of the DSD collars (F and R) outward.

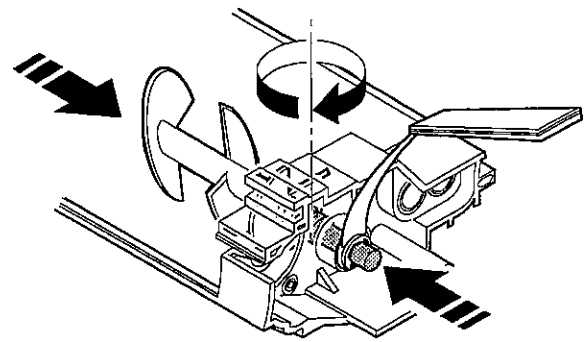



## (5) Thrust clearance adjustment

① When assembling the MX roller and the BK adjustment shaft, insert a thickness gauge (t=0.2mm) into the clearance between the E-ring (which is attached to the BK adjustment shaft) and the DV shaft bearing side, then tighten the set screw while pressing both ends of the shaft.



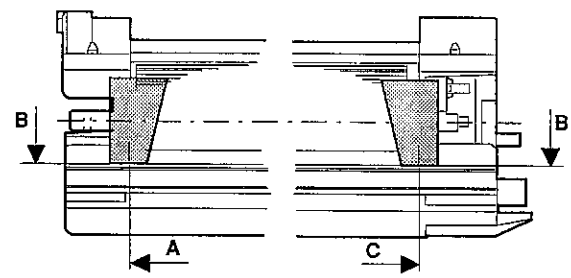
## (6) Note for attachment of developer side seals F and R

① Clean the attachment surface. (Remove oil and foreign material from the surface.)

② Attach the seal neatly. (Do not peel off and reapply repeatedly).

③ When attaching the DV cover, be careful not to deform the seals.

④ Attach side seals along the reference lines A~C.




## (7) Note for attachment of developer/process unit to the main body

When attaching the process unit to the main body, remove the developer unit beforehand. If the process unit in inserted with the developer unit installed, the drawer connector pin of the developer unit may be damaged, resulting in poor or detective contact.

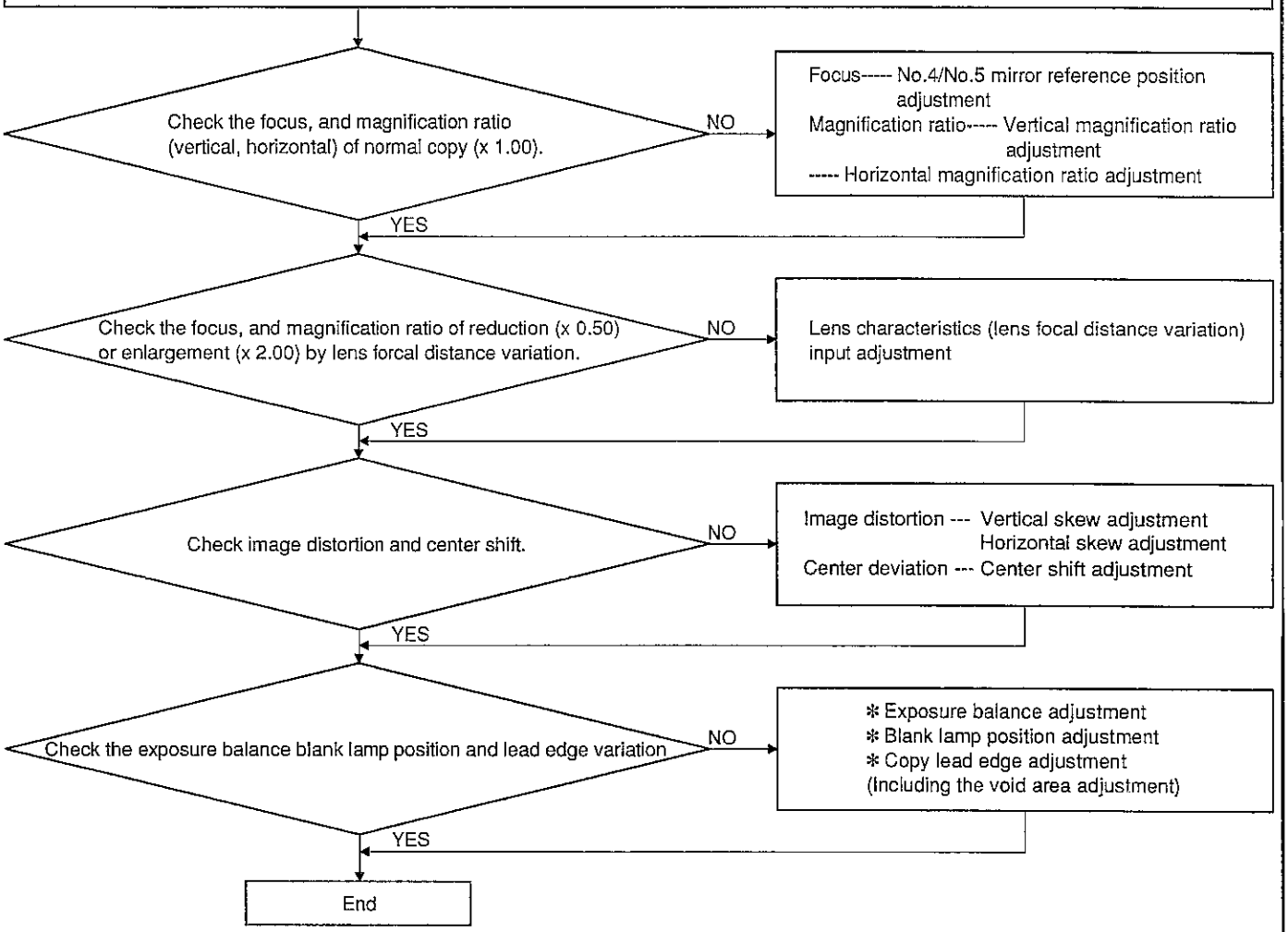
## 2. Optical system adjustments

Perform the optical system adjustments according to the following flowchart.

Check the preset value shown below according to the lens focal distance rank (lens number).

- Lens reference position adjustment ---------- Simulation 48-01 (D)
- No. 4/No.5 mirror reference position image resolution adjustment ---- Simulation 48-01 (B)
- Vertical direction copy magnification ratio ---------- Simulation 48-01 (D)
- Image resolution adjustment ---------- Simulation 48-01 (B)
- Horizontal direction copy magnification ratio ---------- Simulation 48-02
- Zoom correction value input (Lens focal distance variation) ---------- Simulation 48-01 (C), 48-01 (D), 48-01 (F)

For selection after entering a simulation sub code, press ➡ key.


Check the focus, and magnification ratio (vertical, horizontal) of normal copy (x 1.00).
NO
Focus----- No.4/No.5 mirror reference position adjustment
Magnification ratio----- Vertical magnification ratio adjustment
----- Horizontal magnification ratio adjustment
YES
Check the focus, and magnification ratio of reduction (x 0.50) or enlargement (x 2.00) by lens forcal distance variation.
NO
Lens characteristics (lens focal distance variation) input adjustment
YES
Check image distortion and center shift.
NO
Image distortion --- Vertical skew adjustment
Horizontal skew adjustment
Center deviation --- Center shift adjustment
YES
Check the exposure balance blank lamp position and lead edge variation
NO
* Exposure balance adjustment
* Blank lamp position adjustment
* Copy lead edge adjustment
(Including the void area adjustment)
YES
End

※ The exposure balance adjustment, the blank lamp adjustment, and the copy lead edge adjustment can be performed individually. The other adjustments must be performed in the sequence of the flowchart.

## (1) Lens reference position adjustment

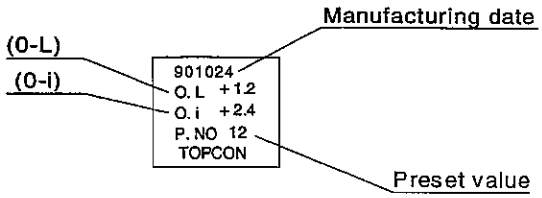
The reference value corresponding to each lens characteristics must be entered. (This value determines the lens home position.)

This adjustment must be performed in the following cases.

- When the lens is replaced.
- When the mirror base is replaced or its mounting position is changed.
- When the main PWB (including the EEPROM) is replaced.
- When self diagnostic U2 occurs.

(Procedure) Perform simulation 48-01 (D).

Input [C] → [=.] → [0] → [=.] → [4] → [8] → [PSW] → [1] → [PSW] keys, select D with [→] key, and the preset value or "50" will be displayed in the copy quantity display.




Substitute value [O – L] (Original – Lens distance variation ⇒ –3.9 ~ +3.9) of the label attached to position A in the figure into the following formula to obtain th result.

50 – [(O – L) × 5] = Corrected reference value

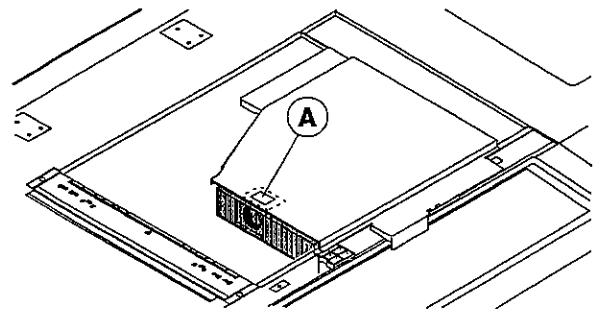
Example: When the value is +1.2:

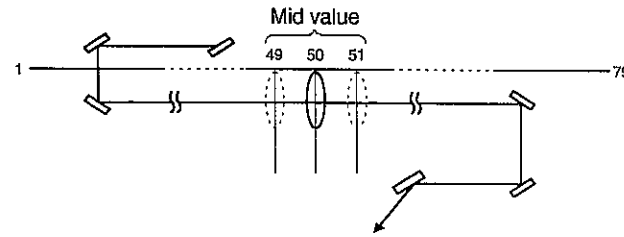
50 – (+1.2 × 5) = 44 ← Input value

Press the PROGRAM key (or START) to store the set value into memory.

(Display contents)

| SIMULATION No.48 | 4 8 D * * * |
|---|---|
| INPUT 1-5 | |
| 1. Front/rear direction magnification ratio adjustment | |
| 2. Paper transport direction magnification ratio adjustment (mirror speed correction) | |
| 3. Lens characteristics input | |
| 4. No.4/No.5 mirror characteristics input | |
| 5. Mirror speed correction value input | |




## (2) No. 4/No. 5 mirror reference position adjustment

1. Lens reference position adjustment → The value corresponding to the lens characteristics must be entered.
   (This value determines the No. 4/No. 5 lens home position.)

This adjustment must be performed in the following cases.

- When the lens is replaced.
- When the mirror base is replaced or its mounting position is changed.
- When the main PWB is replaced.
- When self diagnostic U2 occurs.

(Procedure) Perform simulation 48–01 (B).

Input [C] → [=.] → [0] → [=.] → [4] → [8] → [PSW] → [1] → [PSW] keys, select B with [→] key (focus correction), and the preset value or "60" will be displayed in the copy quantity display.

Substitute value "O – i" located at in position A in the figure into the following formula to obtain the result. 60 – [(O – i) × 5] = Corrected reference value

Example: When the value is +1.2:

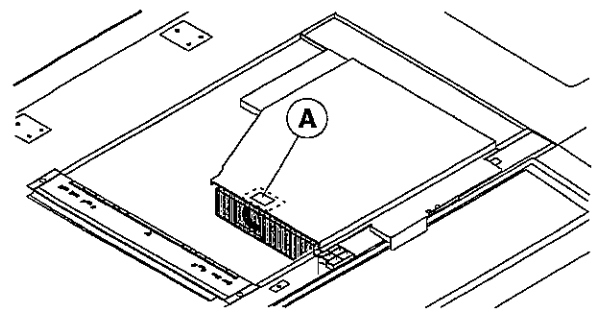
60 – (+1.2 × 5) =54

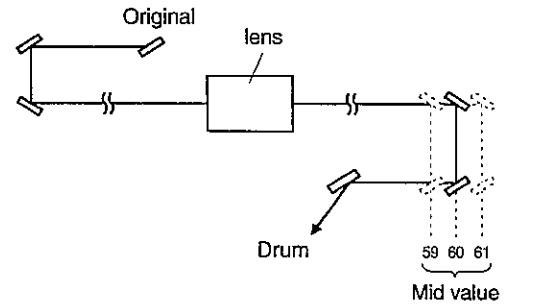
If the No. 4/no. 5 mirror reference value is greater than the center value 60, the mirror moves away from the lens to lengthen the light path. If it is smaller than the center value, the mirror moves towards the lens to shorten the light path.

Press the PROGRAM key (or START) to store the set value into memory.

(Display contents)

| SIMULATION No.48 | 4 8 B * * * |
|---|---|
| INPUT 1-5 | |
| 1. Front/rear direction magnification ratio adjustment | |
| 2. Paper transport direction magnification ratio adjustment (mirror speed correction) | |
| 3. Lens characteristics input | |
| 4. No.4/No.5 mirror characteristics input | |
| 5. Mirror speed correction value input | |



## (3) Vertical copy magnification ratio adjustment

This adjustment must only be performed when mirror mirror bases A, B and C are in parallel with each other and when focus is properly adjusted.
This adjustment must be performed in the following cases.

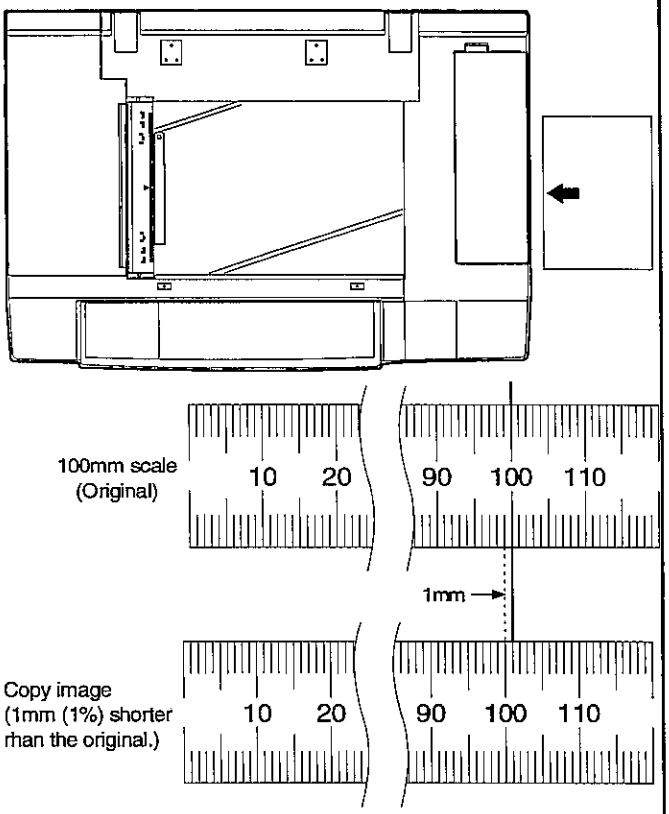
- When the lens home position sensor (LHPS) is replaced or its mounting position is changed.
- When the lens is replace.
- When the mirror base is replaced or its mounting position is changed.
- When the main PWB (including the EEPROM) is replaced.
- When self diagnostic U2 occurs.

(Procedure)

① Place a scale on the original table as shown in the figure at right.
② Make a normal copy of A4 (11″ × 8 1/2″).
③ Compare the copied scale image on the paper to the actual scale.
④ Obtain the vertical magnification ratio correction factor from the following formula.
Vertical copy magnification ratio correction factor =
$\frac{\text{Original dimension} - \text{Copy image dimension}}{\text{Original dimension}} \times 100\ (\%)$
(Example) Vertical copy magnification ratio correction factor =
$\frac{100 - 99}{100} \times 100 = 1$
⑤ Perform simulation 48–01 (D).
With [C] → [=/⌟] → [0 / ◊] → [=/⌟] → [4] → [8] → [PSW] → [1] → [PSW] → [→] keys, the preset value of the vertical copy magnification ratio adjustment is displayed.
⑥ Obtain the preset value of the vertical copy magnification ratio adjustment from the following formula.
Vertical copy magnification ratio preset value = The above preset value (displayed in step ⑤) + Vertical copy magnification ratio correction factor × 10
(Example) The above preset value = 25 + (1 × 10) = 35
⑦ Set the vertical copy magnification ratio adjustment preset value.
[ ] → [ ] → [PSW]
When the preset value is changed by 1, the copy magnification ratio is changed 0.1%.
⑧ Make a normal copy and compare the copied scale image on the paper to the actual scale.
⑨ If the scale image coincides with the actual scale, the adjustment is completed. If not, repeat steps ② through ⑧ until the above condition is satisfied.
⑩ Cancel simulation 48.

(Display contents)

| | |
|---|---|
| SIMULATION No.48<br>INPUT 1-5<br>1. Front/rear direction magnification ratio adjustment<br>2. Paper transport direction magnification ratio adjustment (mirror speed correction)<br>3. Lens characteristics input<br>4. No.4/No.5 mirror characteristics input<br>5. Mirror speed correction value input | 4 8 D * * * |



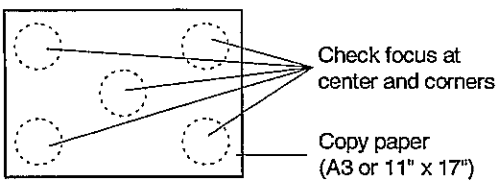

## (4) Image resolution adjustment

(Procedure) Perform simulation 48–01 (B).

① Check the preset value corresponding to the focal distance rank in simulation 48–01.
With [C] → [=/⌟] → [0 / ◊] → [=/⌟] → [4] → [8] → [PSW] → [1] → [PSW] → [→] keys, select B (focus correction), and the ready lamp will light up and the preset value will be displayed.
② If no preset value is set, perform the reference value setting according to "(2) No. 4/No. 5 mirror reference position adjustment." Make a copy with "UKOG–0089CSZZ" or the resolution check chart and check the resolution.
③ When changing the set value, enter the new set value using the 10 keypad.
[ ] → [ ] → [PSW]
Checking procedure
After the No. 4/No. 5 mirror reference position adjustment, check the following.
① Set the test chart "UKOG–0089CSZZ" or the resolution check chart on the original table.
② Make a normal copy of the test chart using A3 (11″ × 17″) paper.
③ Check the focus at the center and the corners. (See the figure at right.)
④ Check that the focus is proper and that the resolution is 5.0 lines/mm or more at the center and 4.5 lines/mm or more at the corners.
If the focus is improper, change the No. 4/no. 5 mirror reference adjustment preset value by one rank and repeat procedures ② through ④ until the proper specifications are obtained.

(Display contents)

| | |
|---|---|
| SIMULATION No.48<br>INPUT 1-5<br>1. Front/rear direction magnification ratio adjustment<br>2. Paper transport direction magnification ratio adjustment (mirror speed correction)<br>3. Lens characteristics input<br>4. No.4/No.5 mirror characteristics input<br>5. Mirror speed correction value input | 4 8 B * * * |



## (5) Horizontal copy magnification ratio adjustment

This adjustment must be performed in the following cases.

- When the main PWB is replaced.
- When the EEPROM and the battery in the main PWB is replaced.
- When self diagnostic U2 occurs.
- When the mirror base is replaced.

By changing the mirror scan speed scan speed, the horizontal (paper feed direction) copy magnification ratio is adjusted.
(Procedure) Perform simulation 48–02.

① Put a scale on the original table as shown in the figure at right. Perform simulation 48–02, and the machine goes into the warming up mode and the ready lamp lights up. At the same time, the preset value (0 ~ 30) is displayed. In this state, make a normal copy and obtain the copy magnification ratio correction factor.
Copy magnification ratio correction factor (MRCP) =
$\frac{\text{Original dimension} - \text{Copy dimension}}{\text{Original dimension}} \times 100\ [\%]$

② Change the displayed value using the copy magnification ratio correction factor.
(Input value) = (Preset value) + (Copy magnification ratio correction factor [%]) × 10

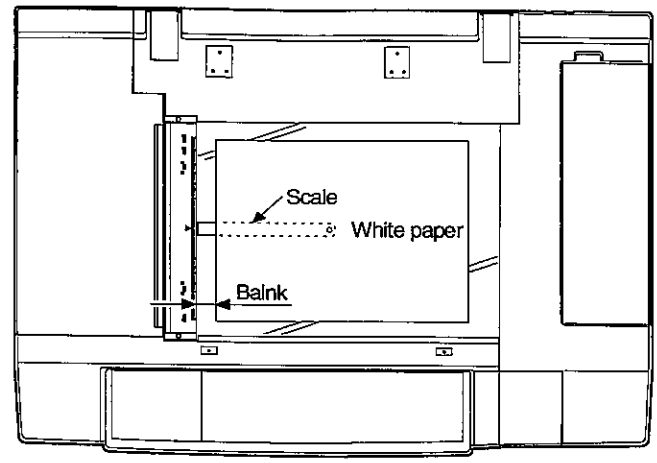
- Example 1: 25 = 15 + 1 × 10
- Example 2: 5 = 15 + (–1 × 10)

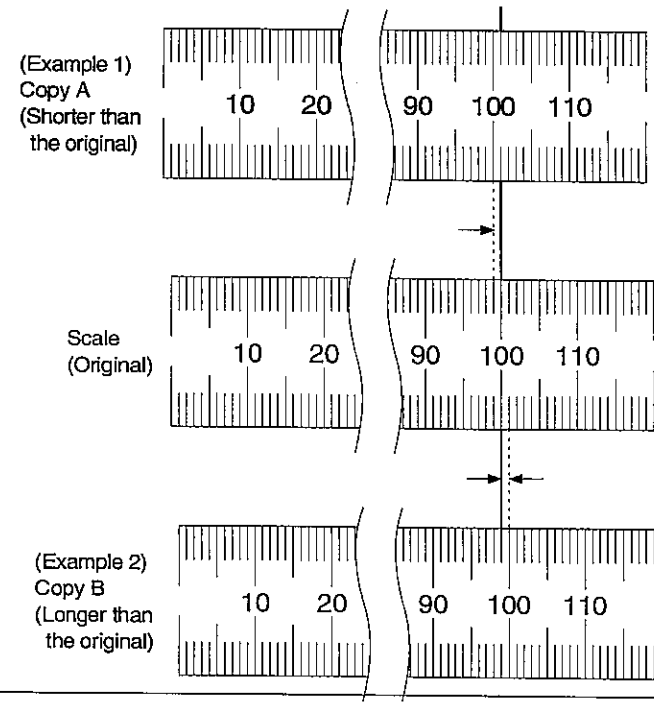
Enter the input value and press the START key. The input value is stored in memory and the ready lamp goes off.

③ Cancel simulation 48–02.
(Note) Input of the simulation 48-02 set value can be performed only in the range of 0 ~ 30.

(Display contents)

| | |
|---|---|
| SIMULATION No.48<br>INPUT 1-5<br>1. Front/rear direction magnification ratio adjustment<br>2. Paper transport direction magnification ratio adjustment (mirror speed correction)<br>3. Lens characteristics input<br>4. No.4/No.5 mirror characteristics input<br>5. Mirror speed correction value input | 4 8 * * * |




## (6) Zoom correction value input (Simulation 48–01A, 48–01C, 48-01E, 48-01F)

**<Characteristics input>**

Each lens has variations in its focal distance, and the lens shift distance in zoom copying must be determined according to its focal distance. If the lens shift distance in zoom copying is fixed regardless of variations in the lens focal distance, the copy magnification ratio varies according to the variations in the lens focal distance.
To prevent this, the lens focal distance ranks (see the table in the following page) are stored in memory. When making a zoom copy, the lens shift distance is calculated according to the lens focal distance using the stored data to perform correct zoom copying.

**<When the lens is replaced>**

① Set the correction value for the lens value referring to the "Table of comparison between lens value and simulation input value" in the following page.
With [C] → [=,⌟] → [0 / ◊] → [=,⌟] → [4] → [8] → [PSW] → [1] → [PSW] → [→] keys, select B (focus correction), and the preset value (1 ~ 21) is displayed in the COPIES MADE display.

② Enter the new set value.

Example: When the lens P.NO value is +14, the correction value for sim. 48-01A is 29 using the comparison table.
Perform the key operation as follows:
[2] → [9] → [PSW]
Similarly perform the key operation as follows:
With [C] → [=,⌟] → [0 / ◊] → [=,⌟] → [4] → [8] → [PSW] → [1] → [PSW] → [→] keys, select C, D and F and enter the correct set values.

(When the focus or the magnification ratio is incorrect in zoom copying)
If the focus or the magnification ratio is incorrect with the above correction value, follow the procedure below:

- When the focus at 50% is incorrect, change simulation 48-01 A value by one rank.
- When the focus at 200% is incorrect, change simulation 48-01 F value by one rank.
- When the magnification ratio at 50% is incorrect, change simulation 48-01 C value by one rank.
- When the magnification ratio at 200% is incorrect, change simulation 48-01 F value by one rank.

☆ Simulation 48–01 A and E are for No. 4/No. 5 mirror shift correction (focus), and simulation 48–01 C and F are for lens shift correction (magnification ratio).

<Table A: Comparison between lens value and simulation input value>

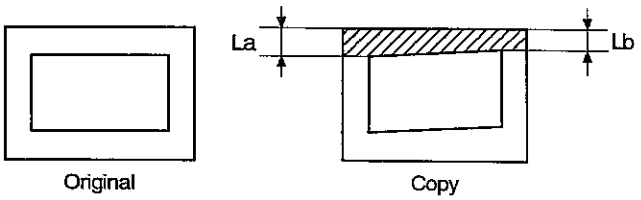
| Lens value (OL. OI) | sim, 48–01 B | sim, 48–01 D | Lens value (OL. OI) | sim, 48–01 B | sim, 48–01 D |
|---|---|---|---|---|---|
| –8.8 ~ –7.6 | 94 ~ 88 | 104 ~ 98 | +0.4 ~ +1.2 | 48 ~ 44 | 58 ~ 54 |
| –7.6 ~ –6.8 | 88 ~ 84 | 98 ~ 94 | +1.2 ~ +2.0 | 44 ~ 40 | 54 ~ 50 |
| –6.8 ~ –6.0 | 84 ~ 80 | 94 ~ 90 | +2.0 ~ +2.8 | 40 ~ 36 | 50 ~ 46 |
| –6.0 ~ –5.2 | 80 ~ 76 | 90 ~ 86 | +2.8 ~ +3.6 | 36 ~ 32 | 46 ~ 42 |
| –5.2 ~ –4.4 | 76 ~ 72 | 86 ~ 82 | +3.6 ~ +4.4 | 32 ~ 28 | 42 ~ 38 |
| –4.4 ~ –3.6 | 72 ~ 68 | 82 ~ 78 | +4.4 ~ +5.2 | 28 ~ 24 | 38 ~ 34 |
| –3.6 ~ –2.8 | 68 ~ 64 | 78 ~ 74 | +5.2 ~ +6.0 | 24 ~ 20 | 34 ~ 30 |
| –2.8 ~ –2.0 | 64 ~ 60 | 74 ~ 70 | +6.0 ~ +6.8 | 20 ~ 16 | 30 ~ 26 |
| –2.0 ~ –1.2 | 60 ~ 56 | 70 ~ 66 | +6.8 ~ +7.6 | 16 ~ 12 | 26 ~ 22 |
| –1.2 ~ –0.4 | 56 ~ 52 | 66 ~ 62 | +7.6 ~ +8.8 | 12 ~ 8 | 22 ~ 16 |
| –0.4 ~ +0.4 | 52 ~ 48 | 62 ~ 58 | | | |

<Table B: Comparision between P. NO value and simulation input value>

| P. NO | Sim 48-01 A | Sim 48-01 C | Sim 48-01 E | Sim 48-01 F |
|---|---|---|---|---|
| 1 | 15 | 21 | 10 | 21 |
| 2 | 16 | 21 | 10 | 21 |
| 3 | 17 | 22 | 11 | 22 |
| 4 | 18 | 22 | 11 | 22 |
| 5 | 19 | 23 | 12 | 23 |
| 6 | 21 | 23 | 12 | 23 |
| 7 | 22 | 24 | 13 | 24 |
| 8 | 23 | 24 | 13 | 24 |
| 9 | 24 | 25 | 14 | 25 |
| 10 | 25 | 26 | 15 | 26 |
| 11 | 26 | 26 | 15 | 26 |
| 12 | 27 | 27 | 16 | 27 |
| 13 | 28 | 27 | 16 | 27 |
| 14 | 29 | 28 | 17 | 28 |
| 15 | 30 | 28 | 17 | 28 |
| 16 | 31 | 29 | 18 | 29 |
| 17 | 32 | 29 | 18 | 29 |
| 18 | 34 | 30 | 19 | 30 |
| 19 | 35 | 30 | 19 | 30 |
| 20 | 36 | 31 | 20 | 31 |
| 21 | 37 | 31 | 20 | 31 |

## (7) Vertical skew adjustment

This adjustment is performed in the following cases.




- When the mirror base drive wire is replaced.
- When No. 1 mirror base or No. 2 mirror base is replaced.

① Set an A3 (11″ × 17″) white paper on the original table, align the paper edge with the original stopper edge and slide the paper completely to the front frame side.

② With the original cover open, make a normal copy (× 1.0) onto A3 or 11″ × 17″ paper.

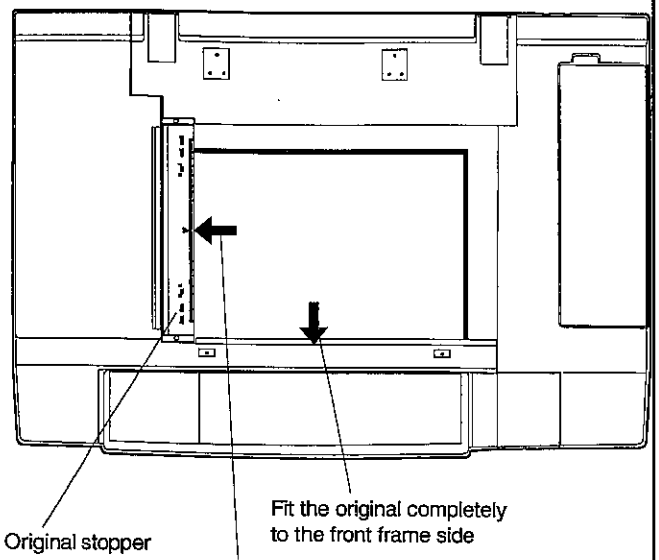
③ Measure the width of the black ground at the lead edge and the trail edge.
If the lead edge black ground width (La) is equal to the trail edge black ground width (Lb), there is no need for adjustment.
If (La) does not equal (Lb), proceed to Step 4.

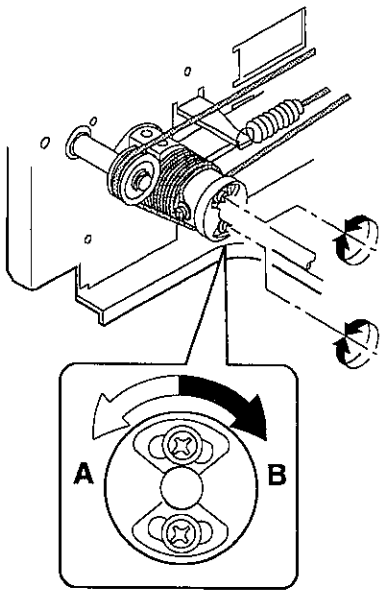
④ Loosen the fixing screw of the mirror base drive pulley at the rear frame side.
If La > Lb, rotate the rear frame side mirror base drive pulley in the direction of arrow A. (Do not move the flange and the mirror base drive pulley shaft.)
If La < Lb, rotate the rear frame side mirror base drive pulley in the arrow direction B. (Do not move the flange and the mirror base drive pulley shaft.)

⑤ Tighten the mirror base drive pulley fixing screw.

⑥ Perform procedures ① to ③.

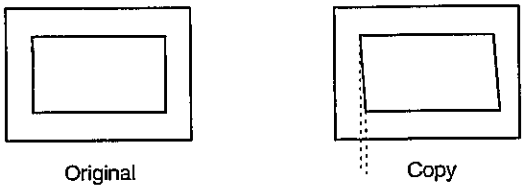
⑦ If La is not equal to Lb, perform ④ and ⑤ again. (If La = Lb, the adjustment is completed.)
Repeat procedures ① to ⑥ until La = Lb.


Original stopper
Fit the original completely to the front frame side
Align the original edge and the original stopper edge



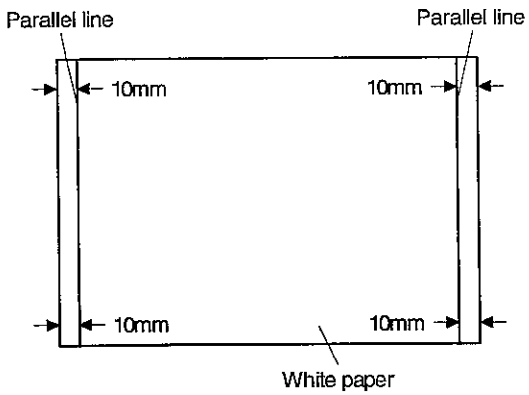
## (8) Horizontal skew adjustment

When there is no vertical skew (in the mirror base scanning direction) but there is horizontal skew (improper rectangularity to the scanning direction), adjust the No. 2/No. 3 mirror base unit rail height and the No. 4/No. 5 mirror base unit eccentric screw.
This adjustment must be performed in the following cases.




- When the mirror base drive wire is replaced.
- When the No. 1 mirror base or the No. 2 mirror base is replaced.
- When the No. 2 mirror base rail is replaced or shifted.

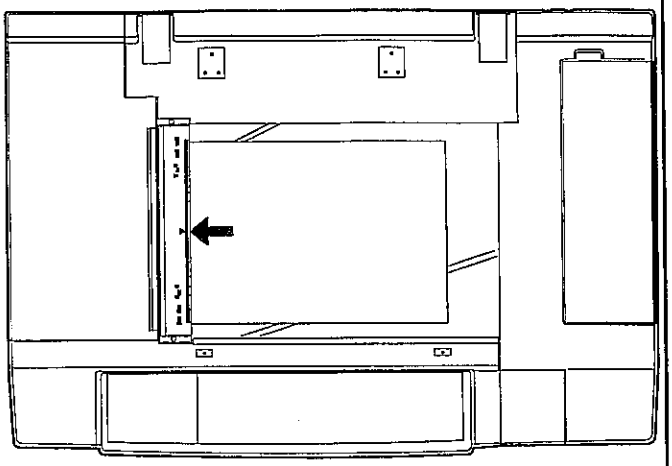
① Preparing of an original for the adjustment
Draw 2 parallel lines as shown below. The lines should be drawn 10cm from each side of an A3 (11″ × 17″) paper.

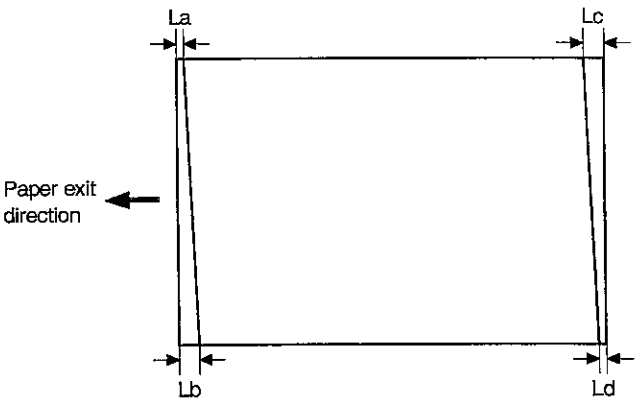


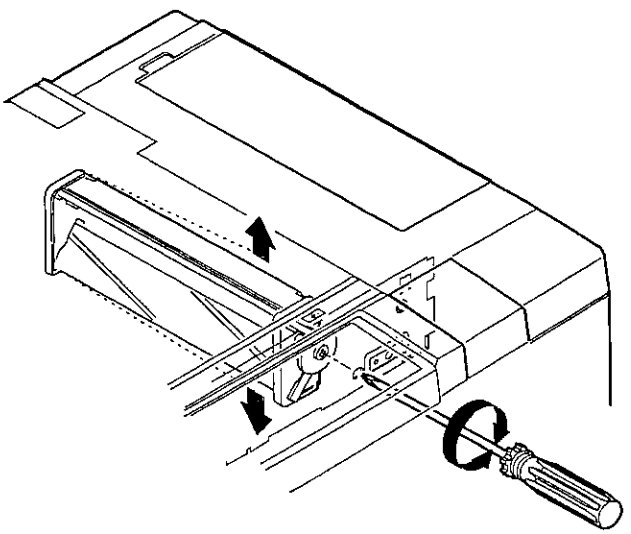

② Make a normal copy (× 1.0) on A3 (11″ × 17″) paper.

③ Measure the distances (La, Lb, Lc, and Ld) on the copy paper as shown in the figure.
When La = Lb and Lc = Ld, there is no need for adjustment.

Adjustment procedure
When La > Lb (Lc < Ld): →
Turn the eccentric screw to increase the height of the No. 4/No. 5 mirror base unit front frame side.
When La < Lb (Lc > Ld): →
Turn the eccentric screw to decrease the height of the No. 4/No. 5 mirror base unit front frame side.
Check how much the eccentric screw is turned. (One rotation of the eccentric screw changes the height by 2mm and changes the difference (La – Lb) by 4mm.)
※ Open the front cabinet and insert a screwdriver through the adjustment hole to turn the screw.
If horizontal skew cannot be corrected using the above adjustment, then perform the following adjustment.





### Adjustment procedure

① Shift the mirror base B rail up and down to adjust.
- If La > Lb, shift the paper exit side mirror base B rail upwards half of the difference. [(La – Lb)/2]
- If La < Lb, shift the paper exit side mirror base B rail downward half of the difference. [(La – Lb)/2]

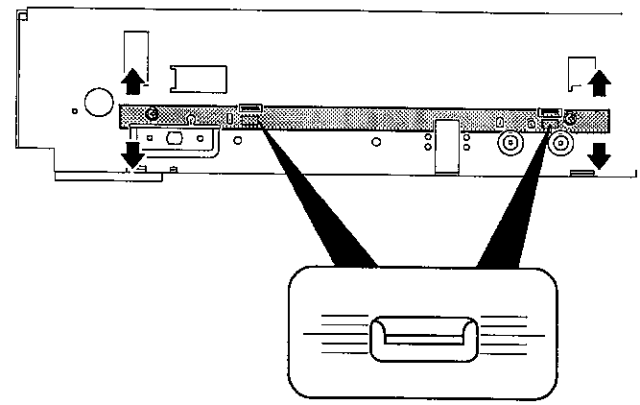
Example: When La = 12mm and Lb = 9mm, shift the paper exit side mirror base B rail upward 1.5mm.
- If Lc > Ld, shift the paper feed side mirror base B rail downward half of the difference. [(La – Lb)/2]
- If Lc < Ld, shift the paper feed side mirror base B rail upward half the difference. [(La – Lb)/2]

(When shifting the mirror base rail, hold the mirror base rail grip.)

② Adjust as stated in ① so that La = Lb and Lc = Ld.

③ After completion of the adjustment, manually turn the mirror base drive pulley to scan mirror base A and mirror base B fully to check that the mirror bases do not make contact with each other.

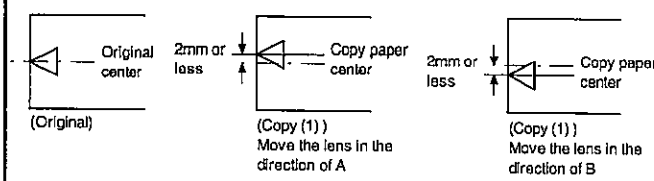
(Note) If the mirror base rail is moved extremely, the mirror base unit may contact with the optical frame.

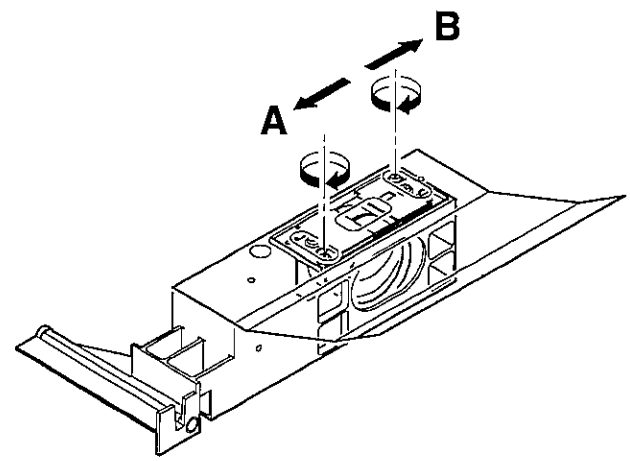


## (9) Center shift adjustment

Make a normal copy and shift the lend in the arrow direction so that the copy center shift is within 2mm from the original center image.

(Note) When the lens is shifted, the blank lamp position adjustment must be performed. This is because the blank lamp center is shifted due to the shift in the original center reference position.

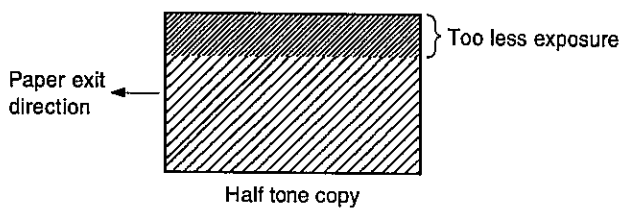


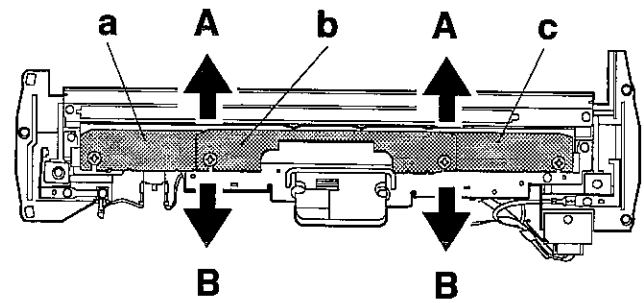

## (10) Exposure balance adjustment

Make a half tone copy at normal ratio, and shift exposure adjustment plates a, b, c in the direction of arrows A and B. Moving the plate in the direction of A, exposure becomes darker. Moving the plate in the direction of B, exposure becomes lighter.

Example: If the following copy is made, move exposure adjustment plate a in the direction of B, to correct the exposure balance.



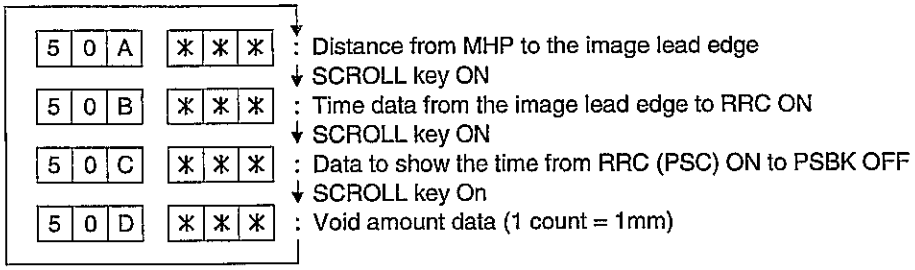

Half tone copy

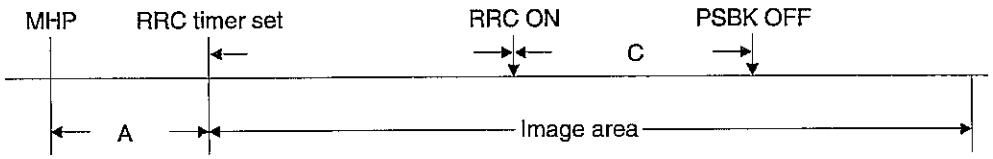


## (11) Copy lead edge adjustment

The lead edge adjustment can be performed using simulation 50-01 or 50-02.
(In normal copy) Image loss 0 ~ 3mm
Void area 1 ~ 3mm

**(Setting with simulation 50-01)**


5 0 A ✱ ✱ ✱ : Distance from MHP to the image lead edge
SCROLL key ON
5 0 B ✱ ✱ ✱ : Time data from the image lead edge to RRC ON
SCROLL key ON
5 0 C ✱ ✱ ✱ : Data to show the time from RRC (PSC) ON to PSBK OFF
SCROLL key On
5 0 D ✱ ✱ ✱ : Void amount data (1 count = 1mm)




A: 50A data (RRC-A)
B: 50B data (RRC-B)
C: 50C data (RRC ON ~ PSBK OFF)

※ SCROLL key is used for selection only, and the program key is use

### Adjustment procedure

① Put a scale on the original table.

② Perform the following key operation.
C → [=↵] → [0/◊] → [=↵] → [5] → [0/◊] → [PSW] → [1] → [PSW] (Simulation 50 is executed.)
The ready lamp lights up and the preset value (1 ~ 99) is displayed.
RRC-A contents: (2 digits) is displayed in the COPIES MADE display.

③ Set both of value A and B to 0, and make one copy each in the magnification ratios of 100% and 200%.
- [0/◊] → [0/◊] → [P] → [→] → [0/◊] → [0/◊] → [PSW] (A normal copy (100%) is made.)
- [Enlargement key] → (After shifting the lens, ready) → [PSW] (An enlarged copy (200%) is made.)

④ Measure the distance between the lead edge of the paper and the image (scale) lead edge, and obtain RRC-A and RRC-B from the following formula.

If the RRC-A preset value is not correct, the lead edge position varies in different magnification ratios.
The RRC-B value is the preset value to adjust the RRC ON timing for aligning the copy paper lead edge and the drum image lead edge.

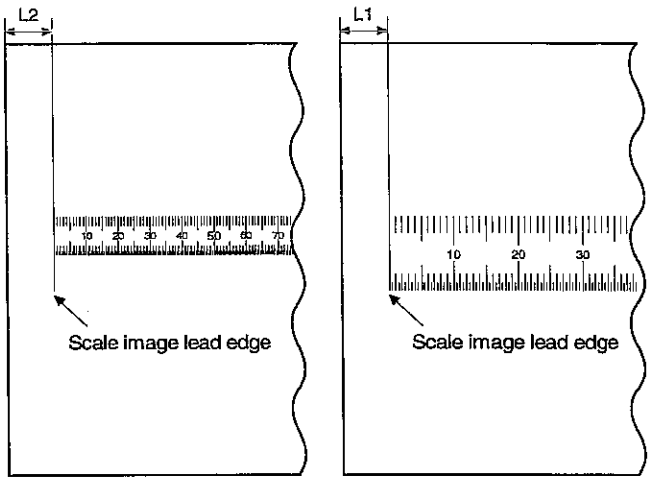
- L1: 200% lead edge shift amount [mm]
- L2: 100% lead edge shift amount [mm]
- RRC-A=4.7222 × (L1 − L2)
- RRC-B=(7.2202 × L2) − (3.6101 × L1)

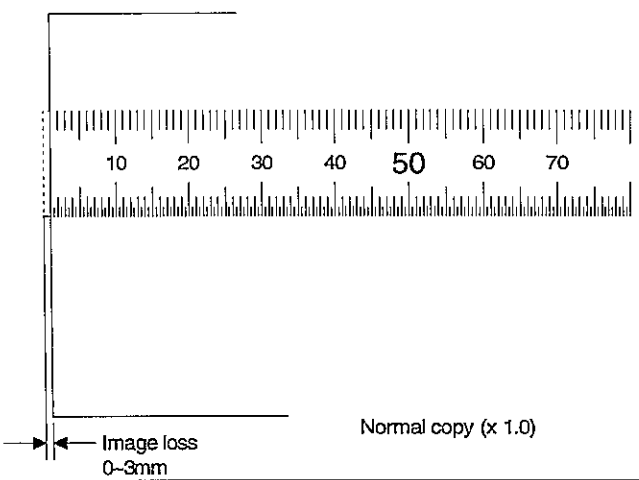
⑤ Enter the RRC-A and RRC-B values obtained above using the 10 keypad. For the key operations, refer to the procedure ③.

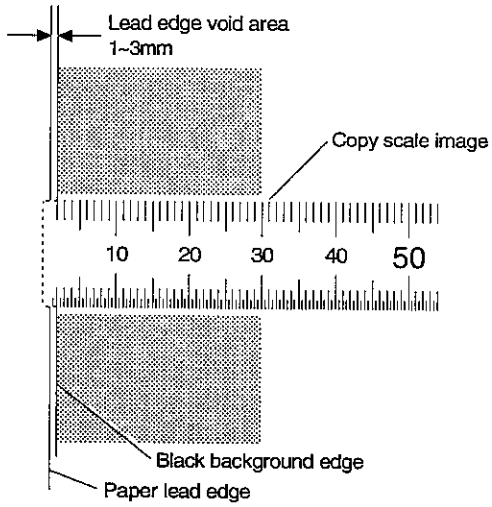
⑥ Make copies at the magnification ratios of 200%, 100% and 50%, and check variations in zooming copy. (About 1.0mm)
If there is an abnormally large variation, repeat procedure ③.

⑦ Make a normal copy and check that the lead edge image loss is within the range of 0 ~ 3mm. If the image is not in the above range, change the RRC-B value so that the image is in the above range.

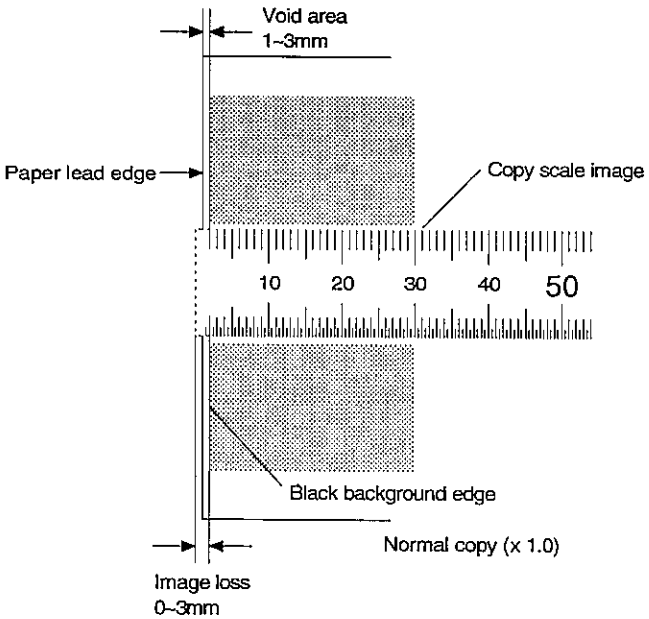
**(Note): The above image loss adjustment value is the adjustment value for simulation, and is not the final adjustment value.**






Normal copy (x 1.0)




⑧ Place a scale and an A3 (11″ × 17″) white paper on the original table as shown below:

⑨ Press the SCROLL DISPLAY key to set the LCD display to the void amount adjustment mode (50D).

⑩ Make a copy and enter the normal copy (× 1.00) lead edge void area adjustment preset value so that the width of the lead edge void area measures 1 ~ 3mm.

□ → □ → PSW

With the above key operation, a copy is made and the key input value is set. Changing the set value by 1 changes the void area about 0.5mm. If the set value is increased, the void amount is also increased.

Simulation 50D accepts input in the range of 0 ~ 20.

⑪ Make a normal copy and check that the void area is within the specified range.
(Specified range)
Image loss: 0 ~ 3mm
Void area: 1 ~ 3mm

⑫ Press CLEAR key to terminate simulation 50-01.
(Note) Whenever the preset values of RRC-A or RRC-B are changed by simulation 50-01, be sure to perform the copy lead edge void area adjustment.

### (Setting with simulation 50-02)

The keys and the display functions are the same as those of simulation 50-01.
In simulation 50-02, L1 and L2 values are directly entered, allowing simplified lead edge adjustment.
The void area adjustment is also the same as in 50-01.

### Adjustment procedure

① Place a scale on the original table.

② C → =⌟ → 0/◊ → =⌟ → 5 → 0/◊ → PSW → 2 → PSW

With the above key operation, the machine goes into simulation 50-02 mode and starts warming up.

- L1: 200% lead edge shift amount (OOO mm: 3 digits)
- L2: 100% lead edge shift amount (XXX mm: 3 digits)

③ Use the message scroll key, the program key, and 10 keypad to set both values of A and b to 0. Then make a copy in each magnification ratio of 100% and 200%.

- 0/◊ → 0/◊ → 0/◊ → P → → → 0/◊ → 0/◊ → 0/◊ → PSW (A normal copy (100%) is made.)
- Enlargement key → (Lens shift, ready) → PSW
  (An enlarged copy (200%) is made.)

④ Measure the distance between the paper lead edge and the image (scale) lead edge on each copy of 200% and 100%. Enter L1 and L2 values using the SCROLL DISPLAY key, and 10 key. With this, RRC-A and RRC-B values of simulation 50-01 are automatically calculated and stored in memory.
Entering procedure
Example
When L1 = 24.5mm and L2 = 15.0mm,
2 → 4 → 5 → → 1 → 5 → P → 0 → PSW

⑤ Next, perform the copy lead edge void adjustment in the same manner as simulation 50-01.

## (12) AE sensor adjustment

The reference output value of the AE sensor is stored in memory using the following procedure.

① Put four or five sheets of white paper (11″ × 17″ or A3) on the table glass. (Use clean white paper and do not use recycled paper.)

② Perform simulation 47.
C → =⌟ → 0/◊ → =⌟ → 4 → 7 → PSW
(The lamp unit stops at the AE sensor level measuring point (moving about 210mm), and the ready lamp lights up.)

③ Press the ready lamp again. (Registration of the AE reference output value is completed.)

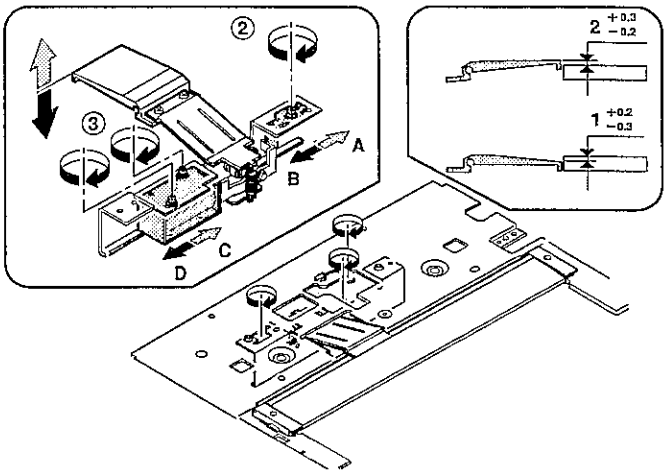
## (13) Original stopper adjustment

### Original stopper height adjustment

① Remove the upper cabinet (left). (3 screws)

② Adjust the original stopper stop position when the original stopper solenoid (DSS) is OFF.
When the screw is loosened and moved in direction A, the original stopper rises.
When the screw is loosened and moved in direction B, the original stopper descends.

③ Adjust the original stopper stop position when the original stopper solenoid (DSS) is ON.
When the two screws are loosened and moved in direction C, the original stopper rises.
When the two screws are loosened and moved in direction D, the original stopper descends.
Perform procedures ② and ③, and adjust so that the height from the top of the glass is $+2^{+0.3}_{-0.2}$mm when the solenoid is OFF, and $-1^{+0.3}_{-0.3}$mm when the solenoid is ON.



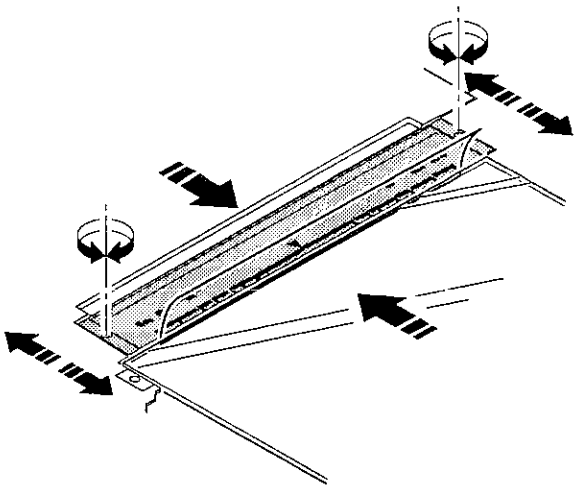

## (14) Document stopper/glass clearance adjustment

① Attach the table glass.

② Insert a paper of 75 – 80g/m$^2$ between the table glass and the document stopper.

③ While pressing the document stopper in the arrow direction, tighten the screws (F/R) of the stopper bearing.

④ Remove the paper, manually operate the document stopper, and check that the stopper lead edge is not in contact with the table glass.
Also check that the paper used in procedure ② cannot be inserted.



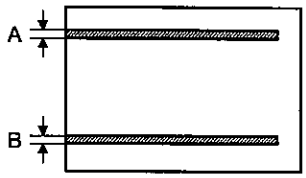
# 3. Process section adjustments

## (1) Blank lamp (BL) position adjustment

① Check that center shift is 2.0 mm or less. (If center shift is more than 2.0 mm, adjust center shift.)

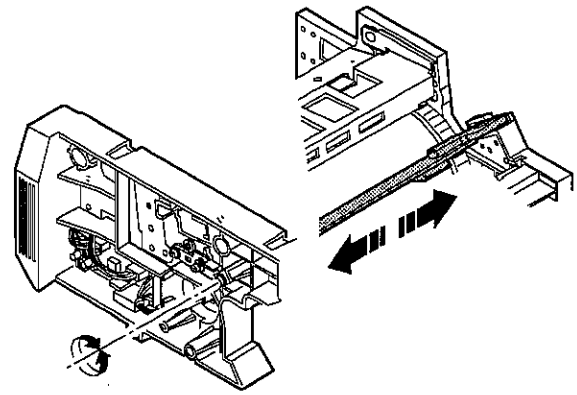
② Set a sheet of white paper of A3 (11" x 17") on the table glass. Make a reduction copy (x 0.64) onto A3 (11" x 17") paper with the original cover open.

③ Measure width of the black background at both sides of the copy. Adjust the blank lamp unit position back and forth so that the size difference is within 1 mm.




(A-B) ≦ 1mm

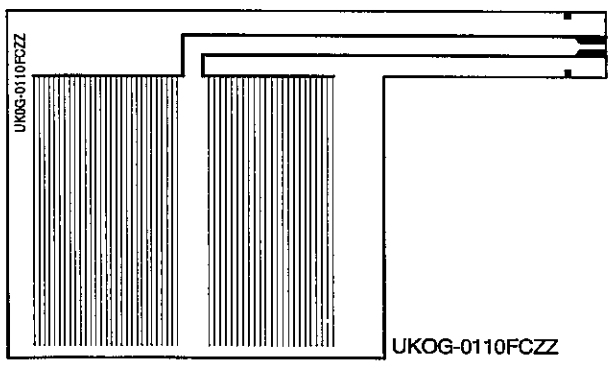
Adjustment screw 1 scale: 0.5 mm change
Adjustment screw 1/2 scale: 0.25 mm change



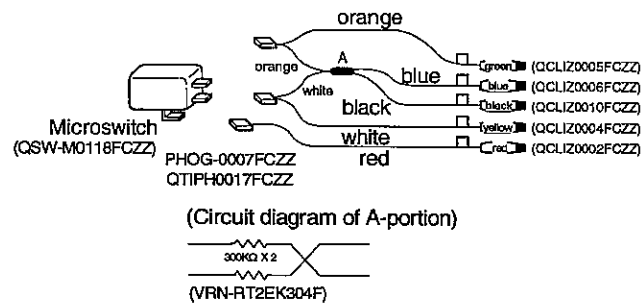
## (2) High voltage output, balance adjustment

### A. Use of the special tool

Electrode sheet (UKOG-0110FCZZ)




Electrode sheet harness (DHAI-0304FCZZ)




(Circuit diagram of A-portion)




(VRN-RT2EK304F)

Use the drum current measuring jig to measure the drum surface current and front/rear balance of each charger. Adjust according to the table below:

| Adjustment output | Sim | Adjustment range | F/R difference | Tester range |
|---|---|---|---|---|
| MC drum current | 8-2 | — | 10μA or less | DC1000μA |
| TC drum current | 8-6 | −55±3μA | 5μA or less | DC1000μA |
| PTC drum current | 8-5 | +15±3μA | 5μA or less | DC1000μA |

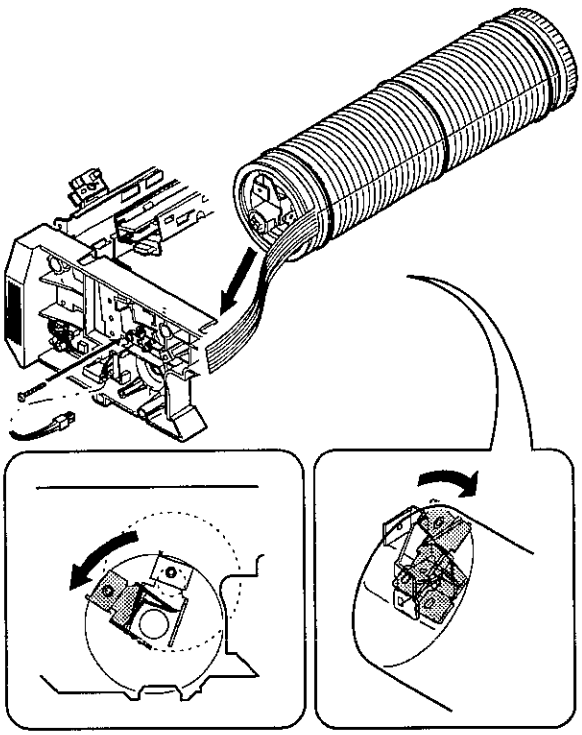
## B. Transfer charger current adjustment (TC)

① Remove the developer unit, cleaner unit, transfer/separation charger unit, and main charger unit from the main body.

② Remove the process unit from the main body. Remove the cleaner unit.

③ Remove the photoconductor drum from the process unit, and attach the electrode sheet with rubber band and tape.

④ Attach the photoconductor drum (with the electrode sheet attached to it) to the process unit.



⑤ Install the drum holder unit to the main body so that it can be removed from the developer unit side of the electrode sheet lead section.

⑥ Clean the transfer charger wire, and install the transfer/separation charger unit to the main body.
(Do not install the main charger unit.)

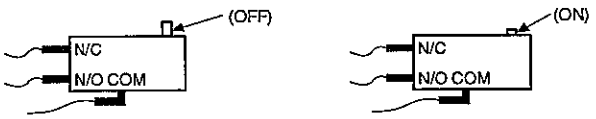
⑦ Connect the electrode sheet to the digital multi meter (or connect to an ammeter.) Manually turn ON the door switch.

⑧ Check the drum current in the front frame side and the rear frame side. The difference in current between the front and rear frame sides: Within 5μA

a. Turn on the main switch, and perform simulation 8-06. (THVG turns on for about 30 sec.)

b. Measure the drum current at the front frame side and at the rear frame side.

- When the microswitch is OFF, the drum current at the front frame side is displayed.
- When the microswitch is ON, the drum current at the rear frame side is displayed.

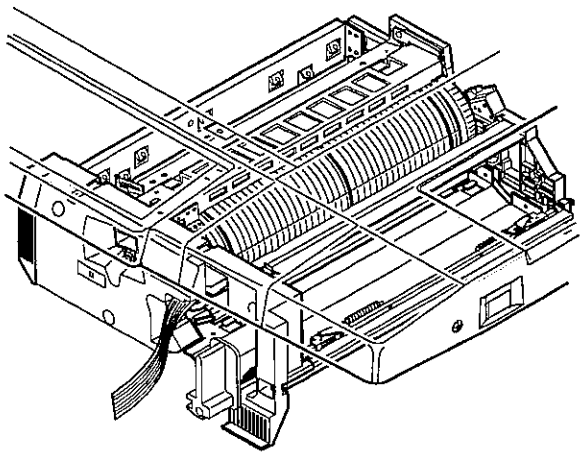


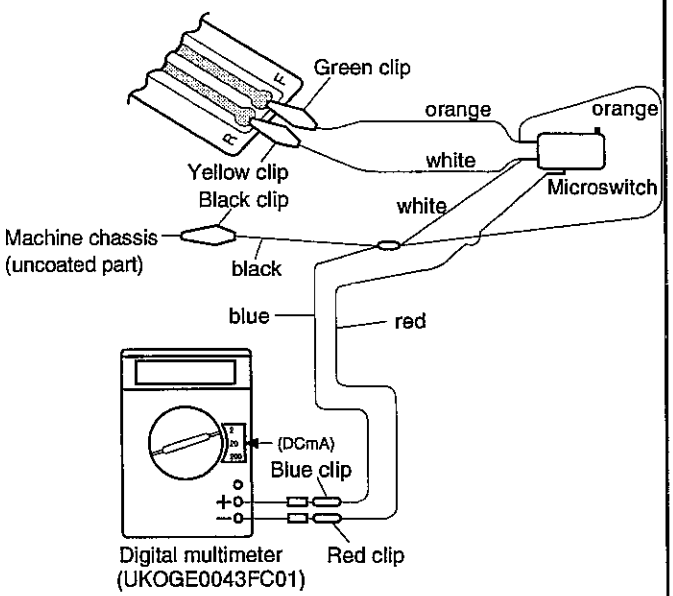

c. Check that the difference in the front and rear frame currents is within 5μA. If the difference is greater than 5.0μA, replace the charger unit, which is defective.

⑨ Adjust the THVG output current.

a. Turn on the main switch and perform simulation 8-06. (THVG turns on for about 30 sec.)

b. Change the input value so that the THVG output becomes -55 ±3μA.
Adjustment range: 3 ~ 56






(Note) Check that the black clip is grounded to the machine chassis securely.
When using UKOGE0043CS01:
Knob 1: Set to DCmA.
Knob 1: Set to 2.
Red clip: Connect to ⊖.
Blue clip: Connect to ⊕.
When using a DC ammeter:
Red clip: Connect to ⊖ of the ammeter.
Blue clip: Connect to ⊕ of the ammeter.

### C. Charger current check

Check drum current difference (balance) in the front and rear frame sides.

① Perform (3)-B-① - ⑤.

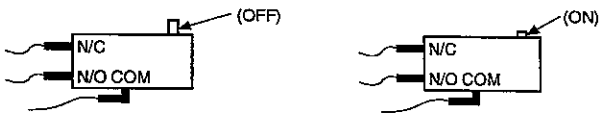
② Clean the saw tooth blade of the main charger, and install the main charger to the main body.
(Remove the transfer/separation charger.) Manually turn on the door switch.

③ Check the drum current at the front and the rear frame sides. Current difference between the front and the rear frame sides: within 10.0 μA

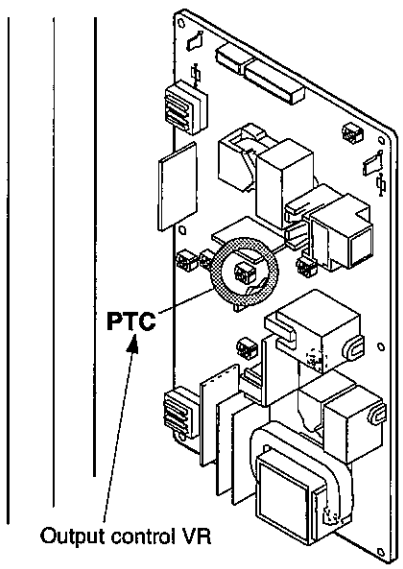
a. Turn on the main switch and perform simulation 8-02.
(MHVG turns on for about 30 sec.)

b. Measure the drum current at the front and the rear frame sides.

- When the microswitch is OFF, the drum current at the front frame side is displayed.
- When the microswitch is ON, the drum current at the rear frame side is displayed.




c. Check that the difference between the front and rear frame currents is within 10.0 μA. If the difference is greater than 10.0 μA.
Adjust with the height adjustment mechanism provided in the process unit.




### D. Pre-transfer charger current adjustment (PTC)

① Remove the developer unit, transfer/separation charger unit, and main charger unit from the main body.

② Remove the process unit from the main body.

③ Remove the photoconductor drum from the process unit, and attach the electrode sheet with rubber band and tape.

④ Attach the photoconductor drum (with the electrode sheet attached to it) to the process unit.

⑤ Install the drum holder unit to the main body so that it can be removed from the developer unit side of the electrode sheet lead section.

⑥ Clean the pre-transfer charger wire.
(Do not install the main charger unit or the transfer/separation charger unit.)

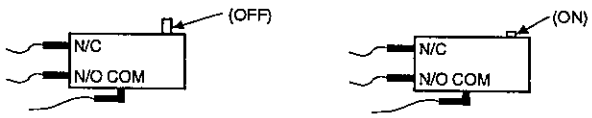
⑦ Connect the electrode sheet and the digital multi meter (or connect to an ammeter.) Manually turn ON the door switch.

⑧ Check the drum current at the front frame side and at the rear frame side. Difference in current between the front and rear frame sides: Within 5.0μA

a. Turn on the main switch, and perform simulation 8-05.
(PTHVG turns on for about 30 sec.)

b. Measure the drum current at the front frame side and at the rear frame side.

- When the microswitch is OFF, the drum current at the front frame side is displayed.
- When the microswitch is ON, the drum current at the rear frame side is displayed.




c. Check that the difference between the front and rear frame currents is within 5.0μA. If the difference is greater than 5.0μA, replace the charger unit, which is defective.

⑨ Adjust the PTHVG output current.

a. Turn on the main switch and perform simulation 8-05.
(PTHVG turns on for about 30 sec.)

b. Adjust the PTC output adjustment VR so that the PTHVG output becomes +15 ±3μA.

### E. Main Charger grid voltage adjustment

Measure the output using the check terminal on the high voltage PWB and adjust to the range shown in the table below.
For this adjustment, the electrode sheet is not used but the OPC drum is installed.

① Install the developer unit,cleaner unit, and the drum holder unit into the copier, and turn on the power. (In this case, the electrode sheet is not attached to the drum.)

② Install the main charger unit to the copier. All charger units must be installed in the copier.

③ Turn on the main switch and check the grid voltage with simulation 8-02,8-03, and 8-04.
The grid voltage set value is displayed in COPIES MADE display.

(Measurement at the high voltage PWB check point)

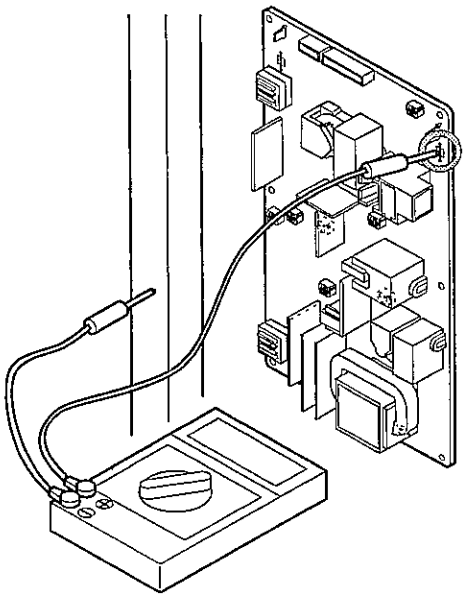
④ Remove the rear cabinet.

⑤ Connect the digital multimeter to the grid voltage output check pin (GB CP).

⑥ Set the digital multimeter range to DCV. (Use a digital multimeter which can measure up to DC100V.)

⑦ Manually turn on the door switch.

⑧ Turn on the main switch and perform simulation 8-02 (normal mode), 8-03 (photo mode), and 8-04 (TSM mode).



### F. Separation charger output adjustment

This adjustment is performed without using the electrode sheet.

① Install the developer unit,cleaner unit, and the drum holder unit into the copier, and turn on the copier power.

② Install the separation charger unit and the drum holder unit into the copier. All charger units must be installed in the copier.

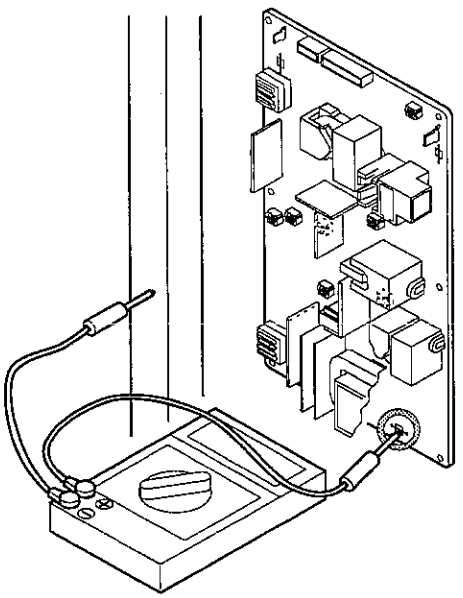
③ Remove the rear cabinet.

④ Connect the digital multimeter to the SHVG output check pin (BCDC CP).

⑤ Set the digital multimeter range to DCV range.

⑥ Manually turn on the main switch and perform simulation 8-07. (SHVG turns on for about 30 sec.)

⑧ During execution of the simulation, adjust the separation charger output monitor voltage (bias voltage) BCDCCP to +320 ± 20V.



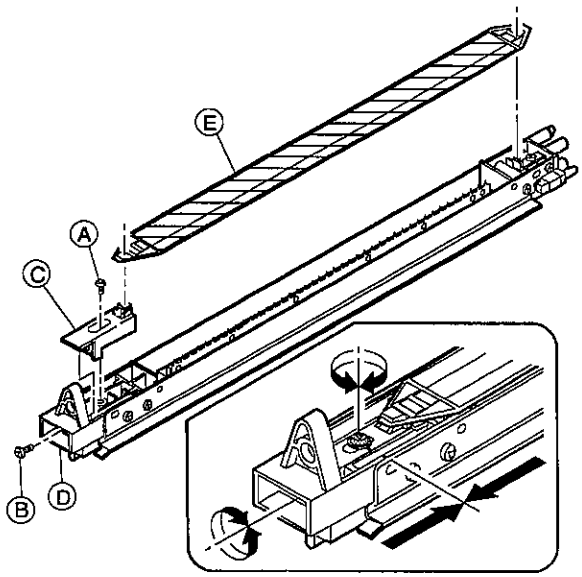
| Adjustment output | (*) | Adjustment value | Check pin/VR | Tester range |
|---|---|---|---|---|
| MC grid voltage (N) | 8-2 | −750±5V | GBCP/VR201 | DC1000V |
| MC grid voltage (P) | 8-3 | −490±5V | GBCP/VR201 | DC1000V |
| MC grid voltage (T/S) | 8-4 | −645±5V | GBCP/VR201 | DC1000V |
| Separation charger DC voltage | 8-7 | +320±20V | BCDCCP/VR601 | DC1000V |

## (3) Notes for high voltage charger units maintenance

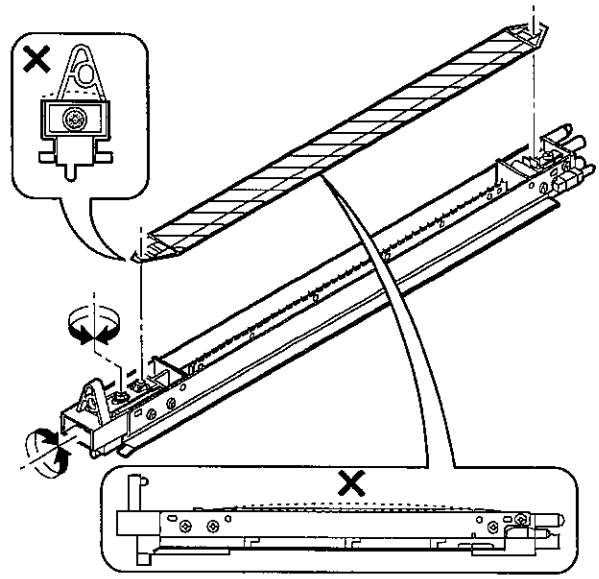
### A. MC unit

① Grid adjustment procedure

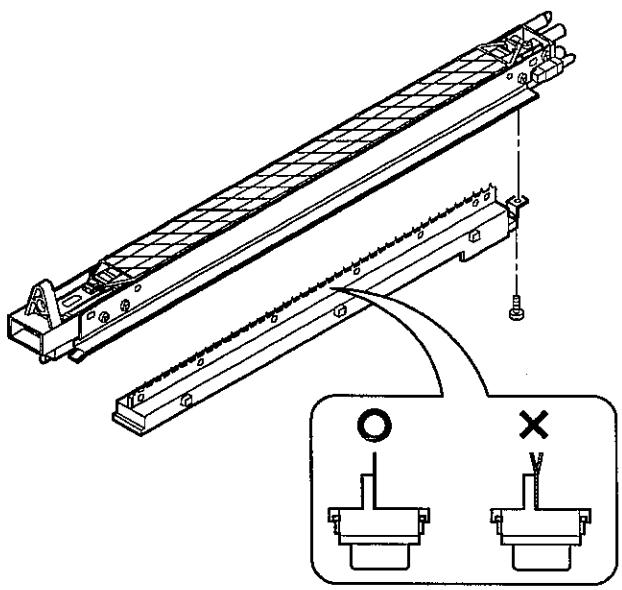
- Fix the grid holder with screw Ⓐ temporarily.
- Position grid Ⓔ and adjust with screw Ⓑ.
- Tighten the screw until the marks of grid holder Ⓒ and the MC holder Ⓓ are aligned. Secure screw A




② When attaching the screen grid, be careful not to deform or twist it. The screen guide should be free from dirt. Check that screen grid is properly positioned and secured.



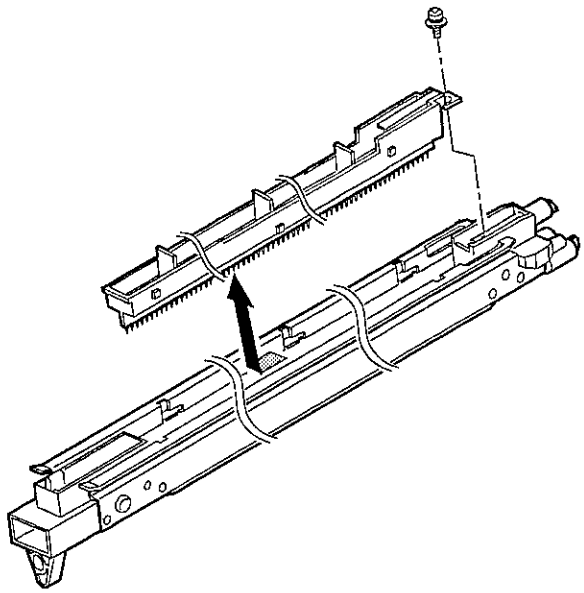
③ Be careful not to deform the teeth of the saw tooth ass'y.

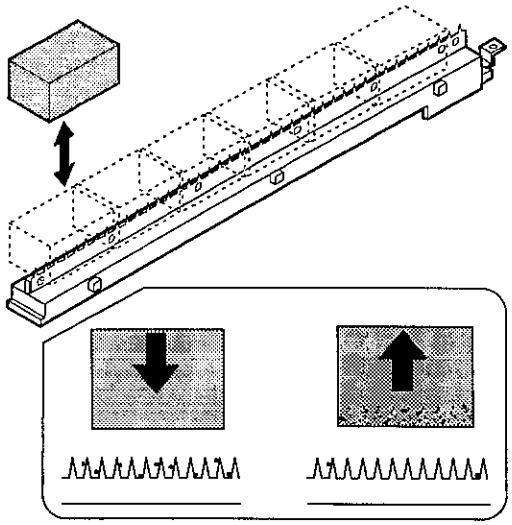


④ Do not touch the inside of the MC case (saw-tooth side), the screen grid, and the teeth.

⑤ Remove the saw-tooth ass'y from the MC unit. (1 screw)

⑥ For cleaning the MC saw-tooth, use styrene foam. Press styrene foam vertically on the teeth to remove dirt.



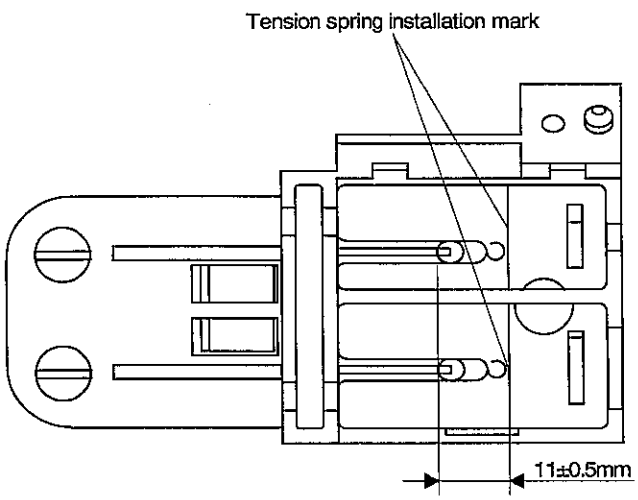


**B. TC/SC unit, PTC unit**

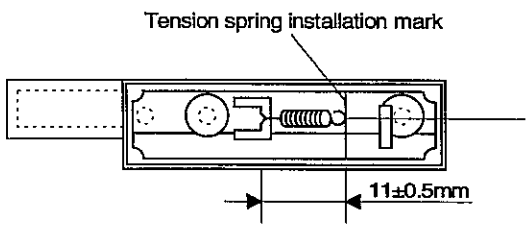
① The tension spring length must be 11 ±0.5mm.

TC/SC wire: (Tungsten oxide)
PTC wire: (Platinum wire)

**<TC/SC unit>**

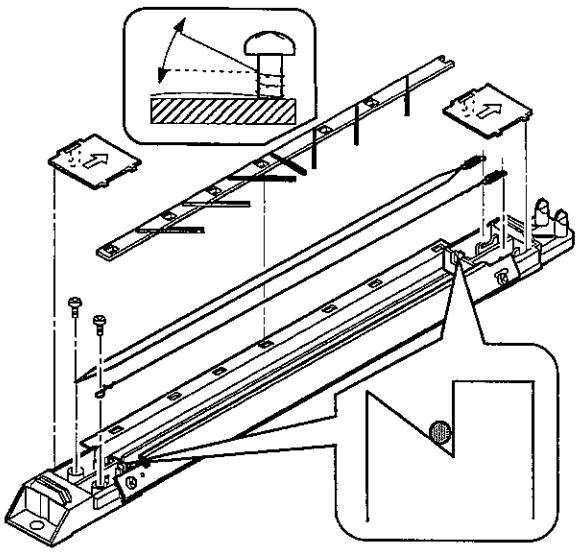



**<PTC unit>**

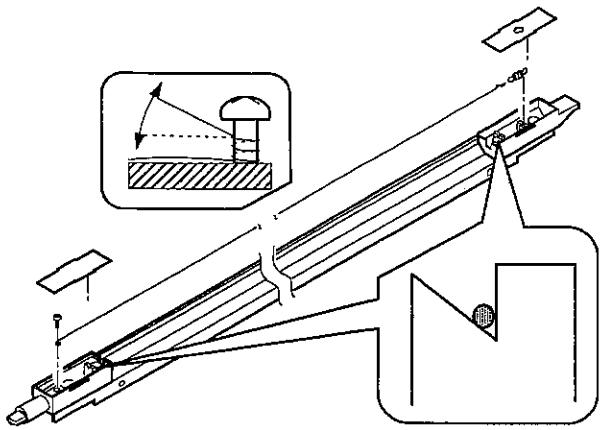


② The charger wire must be free from twist and deformation. It must be securely in the wire positioning groove.

<TC/SC unit>



<PTC unit>



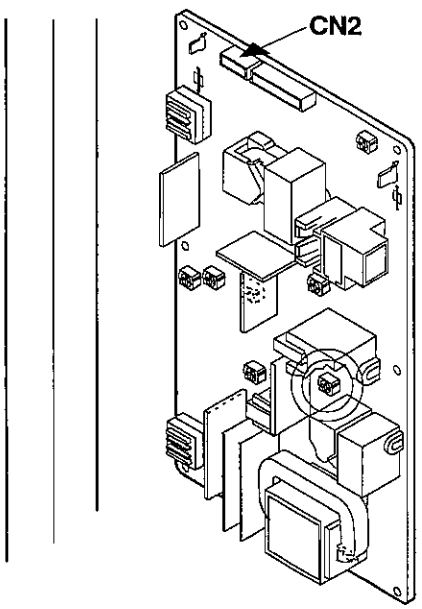
③ The charger case must be free from oil dirt or foreign material.

④ Clean the wire with alcohol.

## (4) High altitude countermeasures

Since the separation charger output is subject to the constant voltage control, the current increases at high altitudes, operating the current limiter. To prevent against this, voltage selection must be made according to the table below. (The other high voltage outputs are under the constant current control and require no adjustment.)

| Altitude | High voltage PWB CN2 Short pin No. | Voltage | |
|---|---|---|---|
| 0 ~ 2000m | 1 – 4 | 6.00±0.2KV | ← When shipped |
| 2000 ~ 3000m | OPEN (disconnect the connector) | 5.25±0.2KV | |
| 3000m ~ | 3 – 5 (change the positions of short pins) | 5.00±0.2KV | |



# 4. Operation panel adjustment

## (1) LCD display contrast adjustment

① Perform simulation 5-1 to light the LCD display.

② Open the front cabinet.

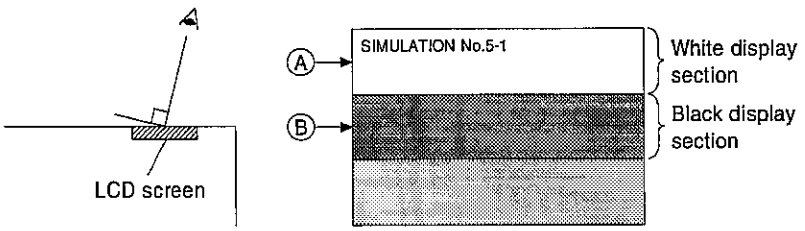
③ Adjust the contrast adjustment volume (VR401) on the operation control PWB.

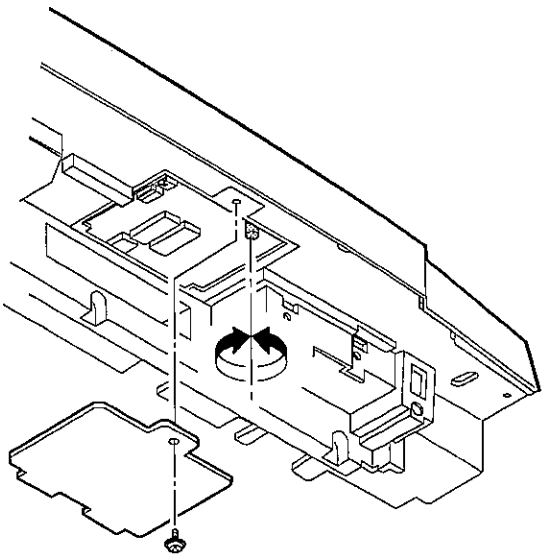
**(Standard adjustment level)**

When viewed from the front of the LCD display, the following conditions must be satisfied.

Ⓐ White display section of the LCD screen is clearly white.

Ⓑ Black display section of the LCD screen is clearly black.



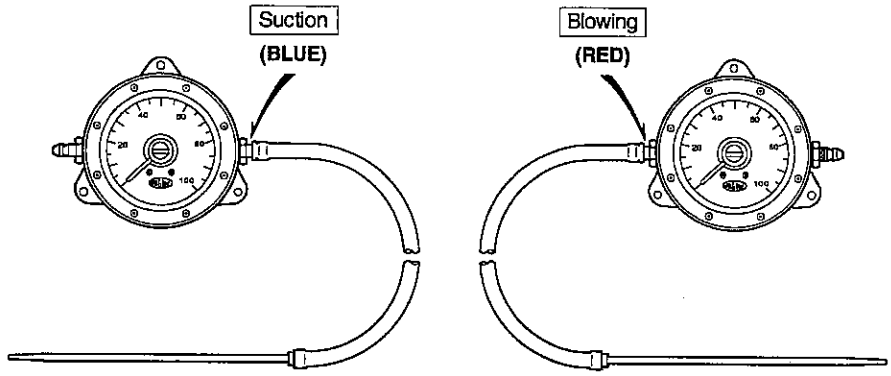



# 5. Paper feed section adjustment

## (1) Suction/blow air pressure measurement

**(Air pressure standard value)**

① Check that the indicator of the pressure gauge shows "0" ($mmH_2O$). If not, turn the correction control so that the indicator shows "0".
Pressure gauge and tube (P/N: UKOG-0178FCZZ)
Pressure measurement nozzle: (P/N: UKOG-0179FCZZ)



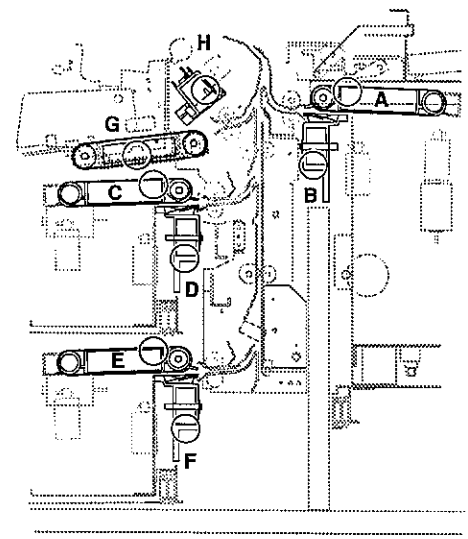

② The table below shows the specified range at each air pressure measuring point.

| | Paper feed tray 1 | | Paper feed tray 2 | | Paper feed tray 3 | | Duplex tray | |
|---|---|---|---|---|---|---|---|---|
| Suction duct ※ | A | 13 ~ -23 | C | 13 ~ -23 | E | 13 ~ 23 | G | 33 ~ 55 |
| Blower duct | B | 33 ~ 45 | D | 33 ~ +45 | F | 33 ~ 45 | H | 33 ~ 45 |
| Simulation No. | 6 → 2 → 1 | | 6 → 2 → 2 | | 6 → 2 → 3 | | 6 → 2 → 4 | |

Unit ($mmH_2O$)

※ When measuring the suction duct air pressure, be sure to measure with paper sucked onto the paper feed belt.
If the measured value is outside the specified range, check the following.

- Does the blower fan /suction fanrotate ?
- Does each valve open and close smoothly ?
- Are the connectors properly connected ?
- Are the solenoids installed to their proper positions ? (Do they operate smoothly ?)
- Check for breakage in the duct main body, the suction duct, and the blower duct.
- Are the fixing screws of the duct main body, the suction duct, the blower duct, and the duct joint tightened securely ?
- Check for air leak in the silencer duct, between the blower fans, and in the duct joint.




**(Measurement method)**

① Turn on the front cabinet SW with the front cabinet open.

② Pull out the paper feed tray.

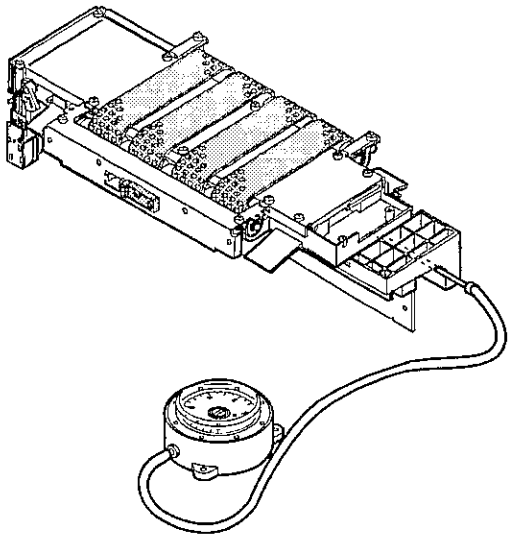
③ Place a sheet of paper (A4, letter 60~75g) in the paper feed tray in the landscape direction, and close the tray.
After checking that the tray has risen all the way up, perform the simulation as shown below

C/▽ → =♩ → O/AUDIT CLEAR → =♩ → 6 → ▭ → 2 → ▭ → (1) ▭

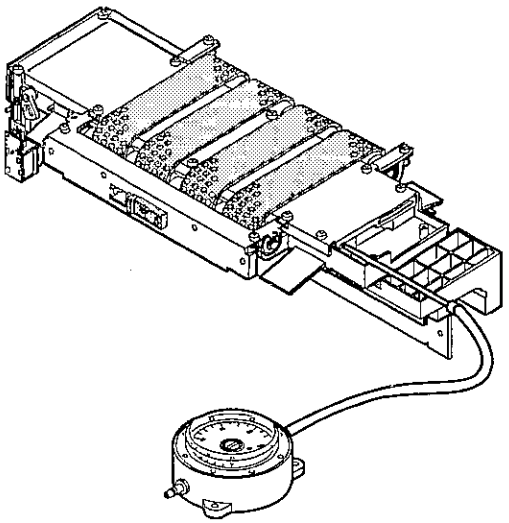
Note: Before measuring the duplex suction duct and blower duct air pressure, be sure to remove the vertical transport unit front cabinet and the intermediate tray unit front cover.

⑤ Insert the nozzle into the measurement point and measure the air pressure.

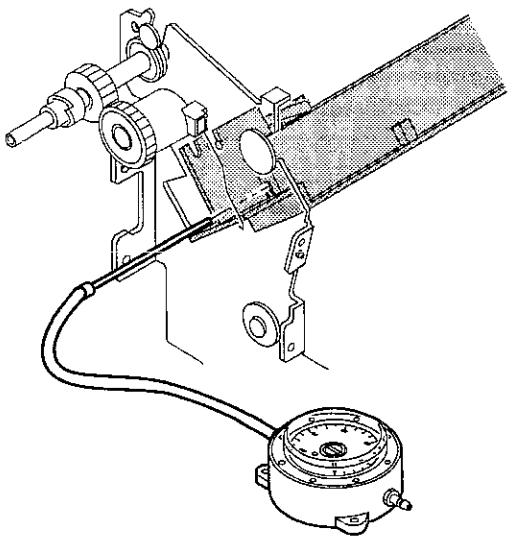
(Blowing side of No. 1, 2, 3 trays)



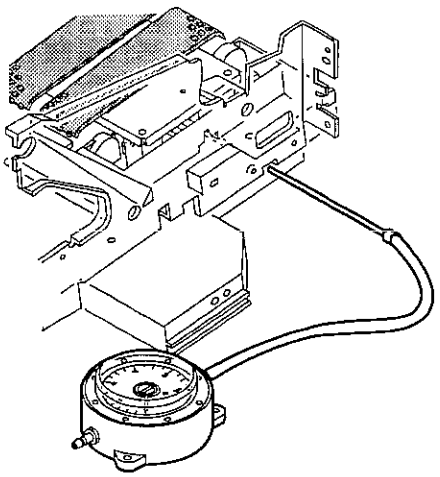
(Suction side of No. 1, 2, 3 trays)



(Blowing side of duplex copy tray)



(Suction side of duplex copy tray)

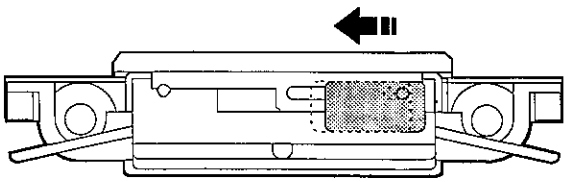


⑥ If the air pressure is within the specified range, press CA key to cancel the simulation program.

⑦ If the air pressure is outside the specified range, adjust as follows:

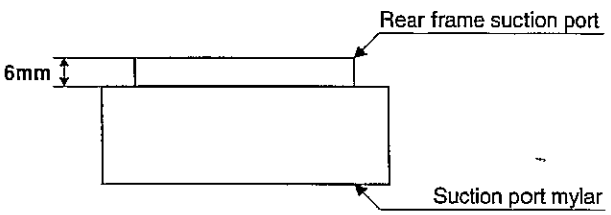
**<When the suction pressure is too low> (at high altifudes)**

The figure shows the air paper feed suction duct section. Sliding the shaded plate to the left will increase the auction air pressure. When the suction pressure is increased by moving the plate, the blowing pressure is decreased accordingly. After adjustment of the suction air pressure, therefore, be sure to adjust the blowing pressure.

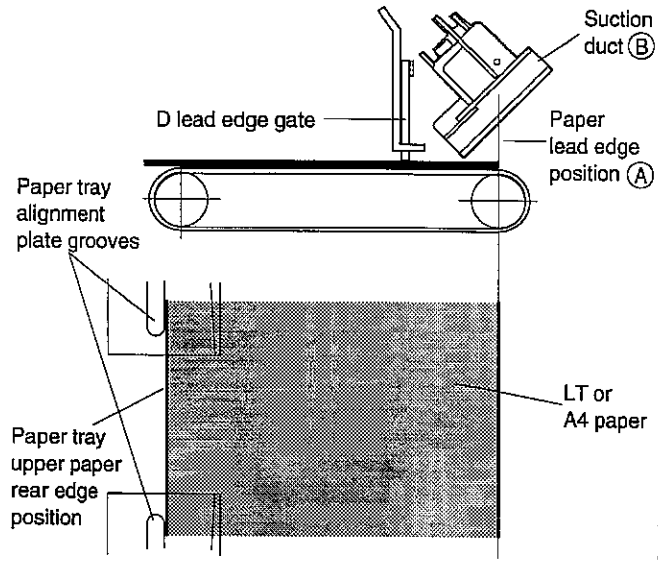


**<When the suction pressure is too high>**

If the suction pressure is below –18 mmH20 in the paper feed tray 1 ~ 3, remove the paper feed unit and check the position of the suction port mylar attached to the suction port in the rear frame.



**(Duplex copy tray)**
When measuring the duplex copy tray air pressure, put the paper in contact with the suction section before measurement.

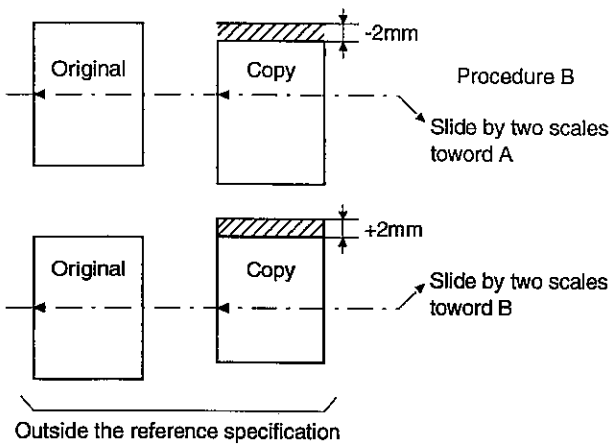

Suction duct Ⓑ
D lead edge gate
Paper lead edge position Ⓐ
Paper tray alignment plate grooves
LT or A4 paper
Paper tray upper paper rear edge position

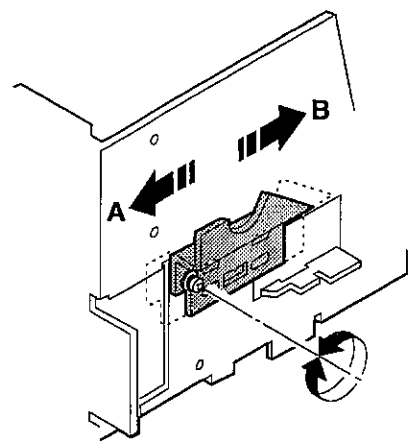
## (2) Center shift adjustment (Tray 1, 2, 3)

Center the test chart against the original stopper on the original table and make a copy. Check that the copy image shift from the original is within the range of 0mm ± 2mm. If not, slide the mounting position of the paper feed tray mounting plate back and forth to make fine adjustment.

① Press the display lamp switch of the paper feed unit to be adjusted. Drive the lift motor, and lower the tray bottom plate. (While the lift motor is driving, the lamp blinks.) After checking that the lamp is off. Slide the tray unit out from the main body.

② Change the mounting position of tray mounting plate back and forth to adjust to the reference value.

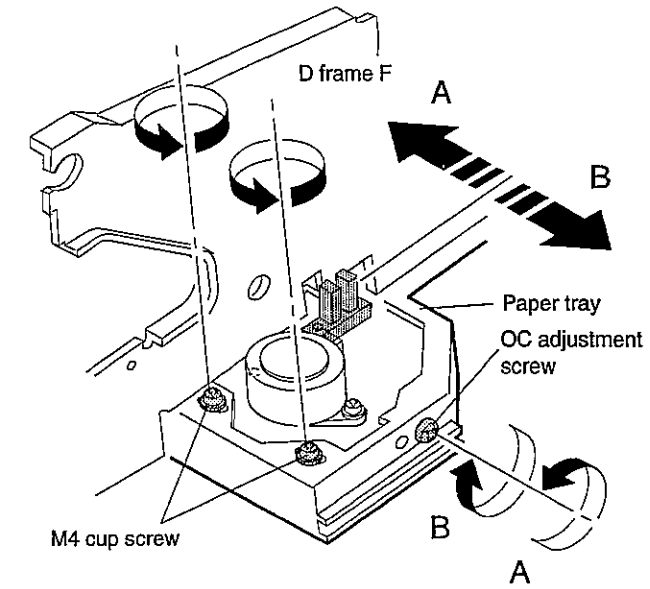


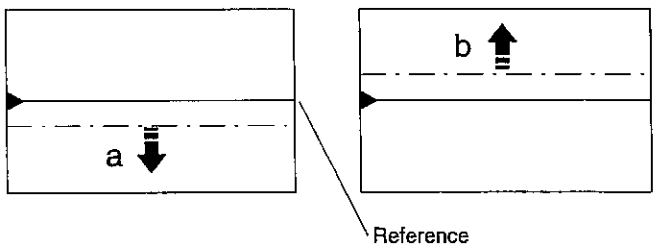



**(Duplex copy tray)**

① If the image is shifted from the reference in the direction of a, loosen two cup screw (M4) and turn the OC adjustment screw. Counterclockwise (in the arrow direction A).

② If the image is shifted from the reference in the direction of b, loosen two cup screws (M4) and turn the OC adjustment screw clockwise (in the arrow direction B).
After adjustment, tighten the two cup screws (M4).

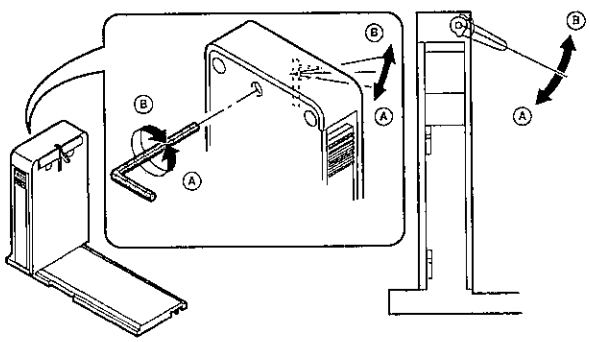


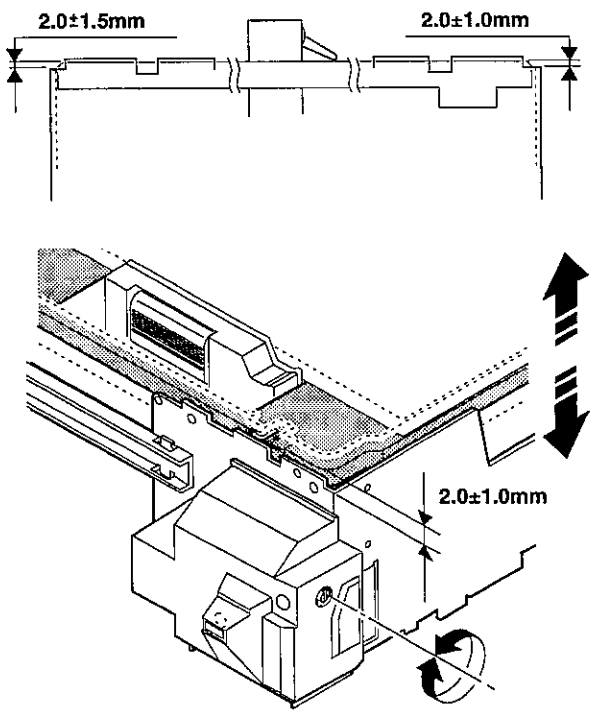




## (3) Tray height adjustment (Tray 2, 3 only)

① Set one sheet of paper in the tray. When the tray is completely lifted, manually cancel the tray lock and pull out the tray.
② The paper lead edge at the paper feed side should be +2.0 ± 0.5 mm above the external tray frame.
③ Adjust the paper feed tray rising sensor (TUD2, TUD3) attached to the rear edge plate. (Check the sensor timing with simulation 6-3.)
Ⓐ When the paper lead edge is too high: Turn the set screw counterclockwise.
Ⓑ When the paper lead edge is too low: Turn the set screw clockwise.

**(One rotation of the set screw adjusts about 1mm.)**

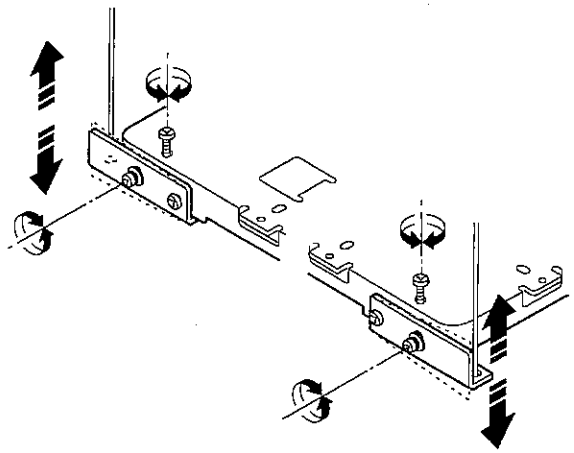


## (4) Tray parallelism adjustment (Tray 2, 3 only)

① Set a sheet of paper in a tray. When the tray is completely lifted, manually cancel the tray lock and remove the tray unit.

② If there is a difference of 0.5mm or more between the height of the front frame side and that the rear frame side, loosen the fixing screws (2 pcs.) and turn and adjust the adjustment screws (F/R).

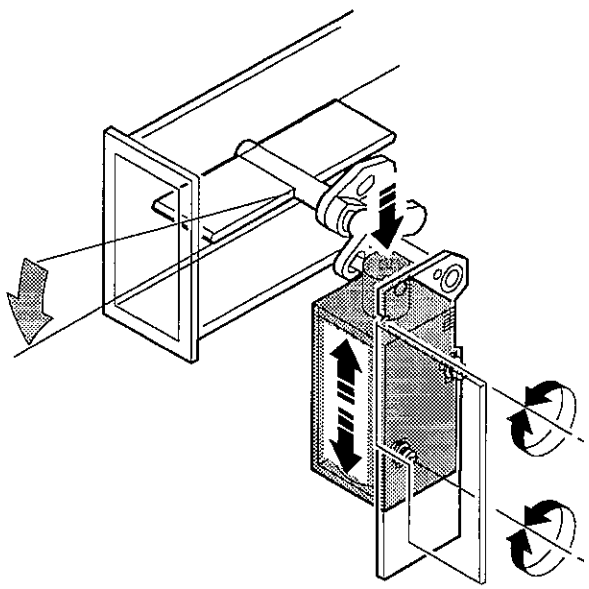


## (5) Air paper feed duct solenoid height adjustment

The solenoid height adjustment is common to all air paper feed units.

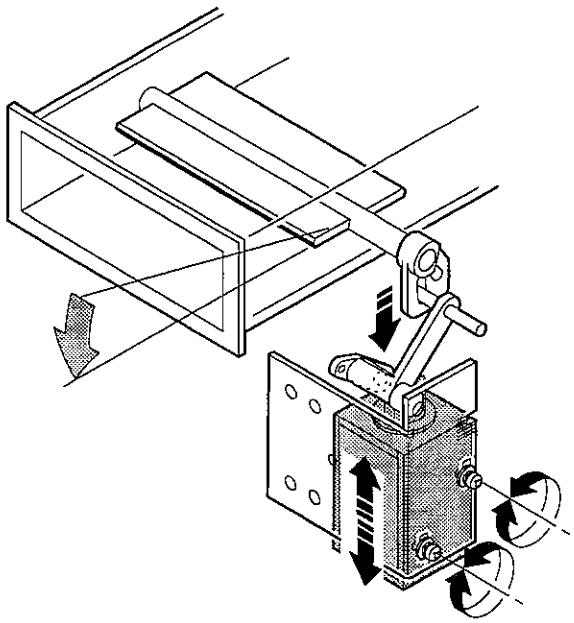
① Loosen the two solenoid fixing screws.

② Push down the plunger manually.



③ When the blowing or suction valve becomes horizontal (reaches the duct stopper) with the plunger depressed, fix the screws.

※ If the solenoid is pushed down further from position B, the valve will be stopped by the stopper. This will apply an excessive force to the shaft and the bearing. Be careful of this. (Fix the solenoid at the point where the valve just makes contact with the stopper.)

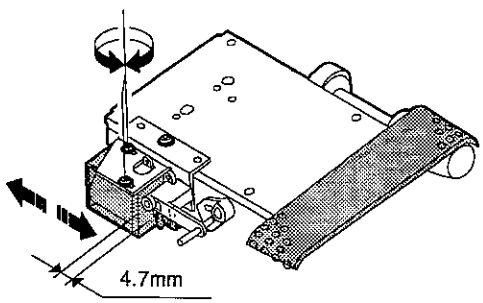


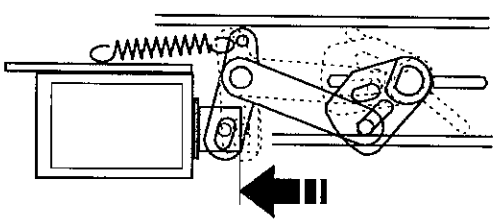
### (Duplex paper feed tray suction duct solenoid)

① Loosen the two fixing screws of the suction duct solenoid.

② Press down the plunger manually.

③ Under the state of ②, tighten the fixing screws at the position where the suction valve opens completely. In that case, check that the solenoid plunger stroke is 4.7mm or less.



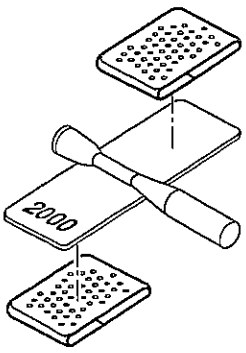



## (6) Note for air paper feed unit assembly

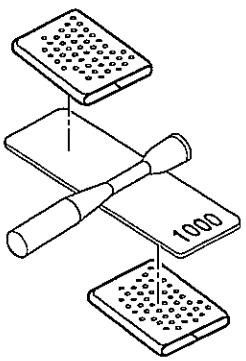
### (Blowing valve unit)

① Valve cushion attachment position

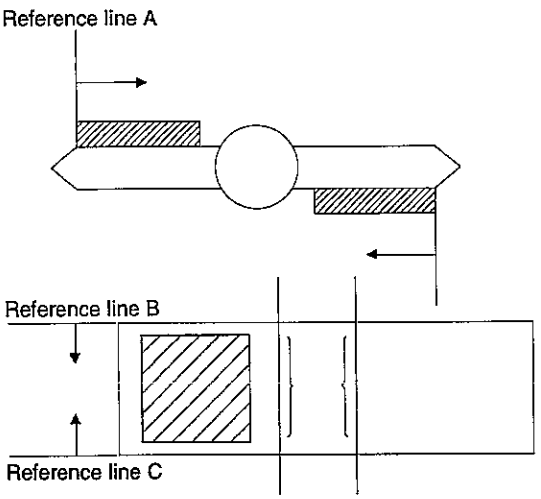
No.1 tray unit




No.2\No.3 tray unit



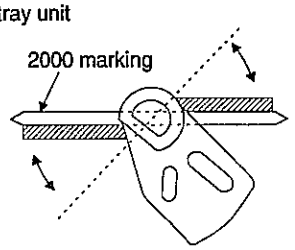

Marking (2000 or 1000) must be seen.



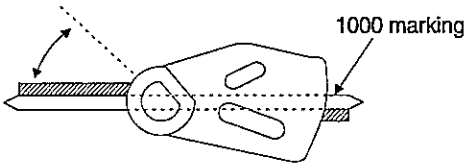

Must be 0.5 mm or less and no protrusion allowed.

② Valve movable arm A attachment position

No.1 tray unit



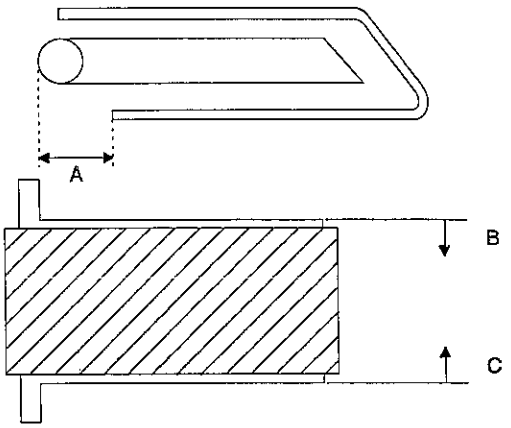

No.2\No.3 tray unit




When the blowing valve is horizontal, the valve movable arm directions differ.

### (Suction duct unit)

① Relief valve cushion attachment position



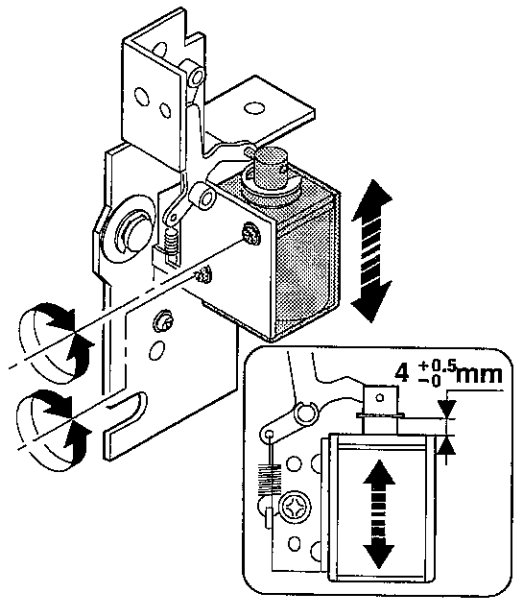

Reference A: 7 ± 2 mm
Reference B, C: 0.5 ± 0.5 mm
Reference A, B, and C must be satisfied and no protrusion allowed.

## 6. Switchback (reverse) unit

### (1) Duplex copy reverse gate solenoid (DGS1, DGS2) position adjustment

① Adjust the solenoid fixing position so that the solenoid plunger stroke is $4.0^{+0.5}_{-0}$mm.

② Adjust the solenoid fixing position so that the reverse gate stop position is as shown below (when solenoid is ON).




Note: Adjust the stroke with the unit straight up.

## 7. Waste toner unit section

### (1) Waste toner bottle full sensor mounting position adjustment

The waste toner bottle full sensor (TNF) senses the waste toner bottle full.
When waste toner weight reaches about 1320 g, waste toner full is detected.

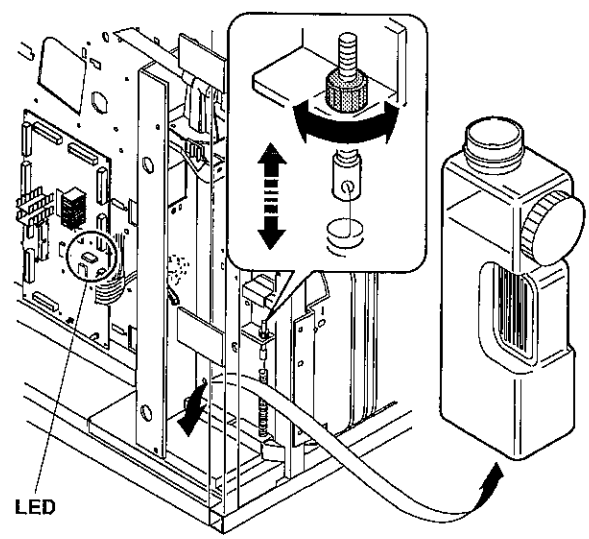
| | | | |
|---|---|---|---|
| Waste toner bottle weight | : | about | 300 g |
| Collected toner weight | : | about | 1320 g |
| Full sense weight | : | Total | 1620 g |

① When performing the waste toner bottle full sensor mounting position adjustment, prepare the waste toner bottle to the weight of about 1620 g.

② Open the waste toner cover.

③ Remove the currently set waste toner bottle, and put the waste toner bottle (about 1620 g) on the waste toner bottle holding plate.

④ The sensor senses when the LED on the main PWB is ON, and does not sense when the LED is OFF.
For adjustment, turn the adjustment nut so that the LED turns on when the bottle (1620 g) is placed on the holding plate. Then under that state, turn the adjustment nut counterclockwise until the LED turns off. The adjustment is completed with the above.



# 8. Copy quality quality adjustment

## (1) The copy quality adjustment must be performed in the following cases.

① When the machine is installed.

② When maintenance is performed.

③ When the high voltage output is adjusted.

④ When the charger wire and its parts are replaced.

⑤ When the high voltage PWB unit is replaced.

⑥ When the copy lamp is replaced.

⑦ When the parts in the AC PWB are replaced.

⑧ When the optical system is adjusted, when its parts are replaced, or when the exposure adjustment plate is moved.

⑨ When the photoconductor drum is replaced or when the developer agent is replaced.

⑩ When the photoconductor is replaced.

⑪ When the developer agent is replaced.

⑫ When the main PWB is replaced.

⑬ When the AE sensor PWB/light quantity correction PWB is replaced.

## (2) Conditions required for the copy quality adjustment

① The optical system is free from dirt.

- Table glass
- Copy lamp/reflector
- Mirrors (No. 1 ~ No. 6)
- Lens

② The AE sensor must be free from dirt.

③ The dirt correction sensor must be free from dirt.

④ The white reference plate must be free from dirt.

⑤ The charger cases and wires must be free from dirt.

⑥ The lamps (BL/DL) must be free from dirt.

⑦ The high voltage outputs must be properly adjusted.

## (3) Process control

**(Note for process control)**

- When simulation 46 (Copy quality adjustment) is performed, the reference value of the optical system dirt correction is registered in the preceding rotation and the grid voltage correction is also performed. According to the result, the grid voltage during simulation 46 is outputted. That is, the dirt correction is cancelled and after correction of the main corona grid voltage, each mode picture quality (brightness) is adjusted. Therefore, the optical unit and the main charger must be cleaned before execution of simulation 46.
- When simulation 46 (Picture quality adjustment) is performed, process control is performed to change the grid voltage and rewrite some data. (Refer to the table below.)
  Simulation 8-2 and FVGNOM (Simulation 44-9) are replaced with the value of NVGNOR.
  Simulation 8-3 and FVGPHT (Simulation 44-9) are replaced with the value of NVGPHT.
  Simulation 8-4 and FVGTS (Simulation 44-9) are replaced with the value of TS.
  The process control later on is performed by calculation based on the result of simulation 46, and the process parameters (grid voltage, copy lamp application voltage) are determined by the result of calculation. When, therefore, simulation 46 is performed, picture brightness in the copy mode must be checked and adjusted.
  When, for example, simulation 46 is performed to adjust an abnormality in the copy mode, if the adjustment is made only in the normal mode without adjusting in the photo mode and the toner save mode, and when simulation is terminated, the picture quality in the photo mode and the toner save mode cannot be guaranteed.
- Do not perform simulation 8-2/3/4 independently.
  In the process control, calculations are performed according to the adjustment result of simulation 46 to determine the process parameters (grid voltage, copy lamp application voltage). If simulation 8-2/3/4 is performed, the grid voltage data of simulation 44-9 is rewritten but the coy lamp application voltage is not rewritten. As a result, the picture quality (brightness) is changed. If. therefore, simulation 8-2/3/4 must be readjusted for some reason, simulation 46 must be adjusted and checked after the adjustment.

Perform the process control as stated below according to each state.

| Procedure | | | | | | | Conditions for process control | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| – | – | O | O | O | O | O | A. When a new machine is installed. | "4" depends on the destination. |
| – | O | O | – | O | O | O | B. When the developer is replaced. | |
| – | O | O | O | – | O | O | C. When the photoconductor is replaced. | |
| – | – | – | – | – | O | – | D. When the process control sensor is cleaned or replaced. | |
| – | – | – | – | – | O | – | E. When the marking sensor is cleaned or replaced. | |
| – | O | O | – | – | – | O | F. When the dirt correction sensor is cleaned or replaced. | |
| – | O | O | – | – | – | O | G. When the AE sensor is cleaned or replaced. | |
| – | O | O | – | – | – | O | H. When the optical system is cleaned. | |
| – | O | O | – | – | – | O | I. When the standard white plate is cleaned. | |
| O | O | O | – | – | – | O | J. When the high voltage output is adjusted. | |

**<<Photoconductor drum temperature>>**

**The SD-3062 is equipped with the drum heater to stabilize the copy quality. When the power plug is connected to the power outlet, the drum reaches the stable temperature in about 15 minutes. Be sure to allow this time before the copy quality adjustment.**

(Note)

Optical section dirt correction

When the standard reflection plate is cleaned, perform test command 46 afterwards to set the reference level of the optical dirt sensor (which is performed automatically in warming up), then perform the copy density adjustment. Do not reverse the sequence of the operations.

If the standard reflection plate is dirties too much, normal correction cannot be performed. Always clean the standard reflection plate before the copy density adjustment.

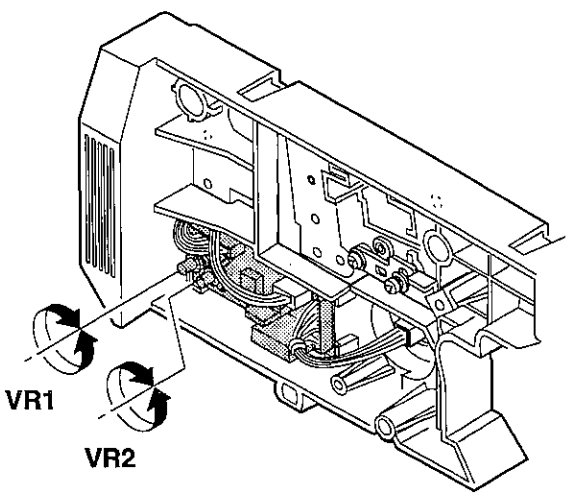
If the copy density adjustment is performed with the standard reflection plate contaminated and then the standard reflection plate is cleaned, normal correction cannot be performed, resulting in background copy and excessive density.

Main corona grid voltage correction

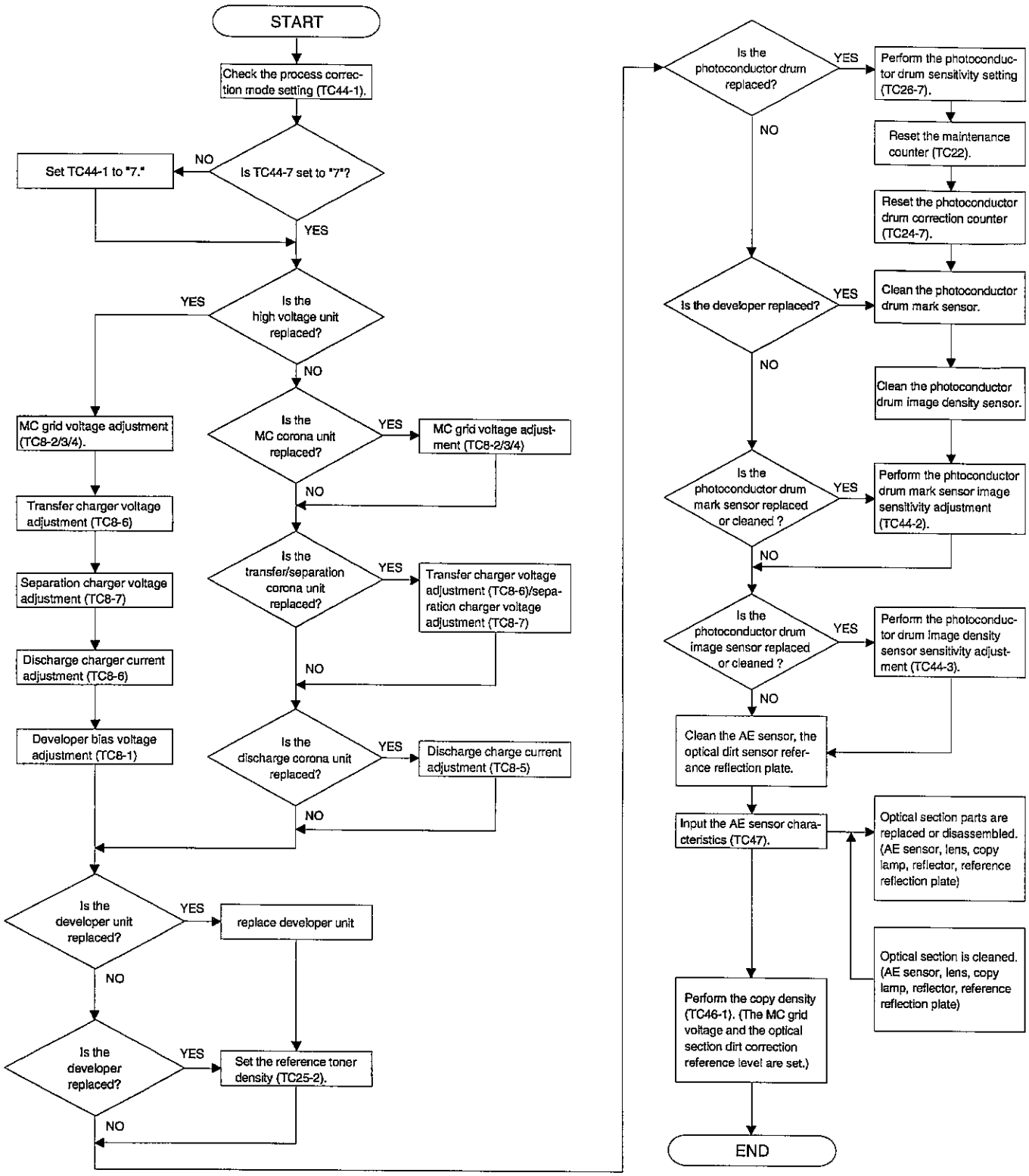
When the following adjustment is performed, be sure to turn off then on the power and perform the main corona grid voltage correction.

- When the image density sensor is cleaned.
- When the main corona grid voltage is adjusted.
- When the developer bias voltage is adjusted.

<table>
<tr><th>Procedure</th><th>Item</th><th>Sim. No.</th><th colspan="3">Contents</th></tr>
<tr><td rowspan="8">1</td><td rowspan="8">Developer bias voltage/grid bias voltage/drum current adjustment</td><td rowspan="8">8-1<br>8-2<br>8-3<br>8-4<br>8-5<br>8-6<br>8-7</td><td></td><td>Japan</td><td>EX</td></tr>
<tr><td>Developing bias</td><td colspan="2">200±10V</td></tr>
<tr><td>MC (N)</td><td>−750±15V</td><td>−750±15V</td></tr>
<tr><td>MC (P)</td><td>−590±15V</td><td>−490±15V</td></tr>
<tr><td>MC (T/S)</td><td>−700±15V</td><td>−645±15V</td></tr>
<tr><td>PTC</td><td colspan="2">+15. 0±5μA IF−RI=5μA</td></tr>
<tr><td>TC</td><td colspan="2">−55. 0±5μA IF−RI=7μA</td></tr>
<tr><td>SC<br>(DC element)</td><td colspan="2">+320±20V</td></tr>
<tr><td>2</td><td>AE (automatic exposure) adjustment level check and adjustment (User AE)</td><td>20<br>(Key operation code)</td><td colspan="3">Check that the AE adjustment level is at the standard level. If not, set to the standard level.</td></tr>
<tr><td>3</td><td>AE sensor gain control</td><td>47</td><td colspan="3">The AE sensor gain is automatically adjusted.</td></tr>
<tr><td>4</td><td>Drum membrance decrease counter and drum sensitivity setting</td><td>24-7<br>26-7</td><td colspan="3">The drum membrane decrease counter is reset.<br>The drum sensitivity is set.</td></tr>
<tr><td>5</td><td>Developer filling<br>Developer adjustment</td><td>25-2</td><td colspan="3">Toner density reference value is set.</td></tr>
<tr><td>6</td><td>Drum marking/process control sensor output check and adjustment</td><td>44-7<br><br><br><br><br>44-2<br>44-3</td><td colspan="3">Drum marking sensor/process control sensor output check<br>• Drum marking sensor: (VR2)<br>• Process control sensor:<br>668 ~ 998 (VR1) see the figure below.<br><br>If the vale is outside the above range, adjust.</td></tr>
<tr><td>7</td><td>Copy quality adjustment</td><td>46</td><td colspan="3">Follow the exposure adjustment procedure.<br>*Note:<br>When simulation 46 is performed, registration of the dirt correction reference and copy density adjustment are performed.<br>Therefore, be sure to clean the optical system before this adjustment. After the adjustment, check and adjust the copy quality in all modes.<br>If the simulation is terminated without checking and adjusting the copy quality, the process control will not operate properly.</td></tr>
</table>



## Operations for normal operations of the copy density correction system (Process control)


START
Check the process correction mode setting (TC44-1).
Is TC44-7 set to "7"?
NO
Set TC44-1 to "7."
YES
Is the high voltage unit replaced?
YES
NO
MC grid voltage adjustment (TC8-2/3/4).
Transfer charger voltage adjustment (TC8-6)
Separation charger voltage adjustment (TC8-7)
Discharge charger current adjustment (TC8-6)
Developer bias voltage adjustment (TC8-1)
Is the MC corona unit replaced?
YES
MC grid voltage adjustment (TC8-2/3/4)
NO
Is the transfer/separation corona unit replaced?
YES
Transfer charger voltage adjustment (TC8-6)/separation charger voltage adjustment (TC8-7)
NO
Is the discharge corona unit replaced?
YES
Discharge charge current adjustment (TC8-5)
NO
Is the developer unit replaced?
YES
replace developer unit
NO
Is the developer replaced?
YES
Set the reference toner density (TC25-2).
NO
Is the photoconductor drum replaced?
YES
Perform the photoconductor drum sensitivity setting (TC26-7).
NO
Reset the maintenance counter (TC22).
Reset the photoconductor drum correction counter (TC24-7).
Is the developer replaced?
YES
Clean the photoconductor drum mark sensor.
NO
Clean the photoconductor drum image density sensor.
Is the photoconductor drum mark sensor replaced or cleaned ?
YES
Perform the photoconductor drum mark sensor image sensitivity adjustment (TC44-2).
NO
Is the photoconductor drum image sensor replaced or cleaned ?
YES
Perform the photoconductor drum image density sensor sensitivity adjustment (TC44-3).
NO
Clean the AE sensor, the optical dirt sensor referance reflection plate.
Input the AE sensor characteristics (TC47).
Optical section parts are replaced or disassembled. (AE sensor, lens, copy lamp, reflector, reference reflection plate)
Optical section is cleaned. (AE sensor, lens, copy lamp, reflector, reference reflection plate)
Perform the copy density (TC46-1). (The MC grid voltage and the optical section dirt correction reference level are set.)
END

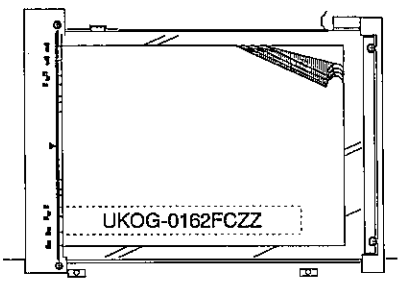
**Process control troubles and countermeasures**

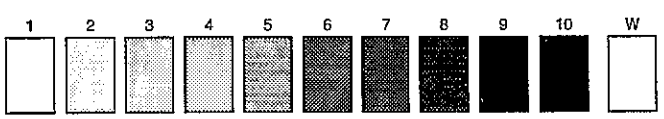
| Trouble code | Sub code | Contents → M/C countermeasure | Cause | Service countermeasure |
|---|---|---|---|---|
| F-2 | 31 | Abnormal reflection rate on the photoconductor surface → Machine stop (Japan/SEC) Low density copy (Others) | 1. The image sensor is not adjusted. | Perform simulation 44-3. (Adjustment value: 833±165) |
| | | | 2. Dirt on the image sensor | • Wipe with soft cloth immersed in alcohol. |
| | | | 3. Dirt on the drum surface (insufficient cleaning) | • Check the cleaning blade and the photoconductor drum surface and replace them if necessary. |
| | | | 4. Defective image density sensor | • Replace the sensor. |
| | | | 5. Defective image density sensor PWB | • Replace the sensor PWB. |
| | 32 | Defective detection of the drum marking → Machine stop (Japan/SEC) → Low density copy (Others) | 1. Defective drum (without marking) | Replace with the proper drum. |
| | 33 (Not display) | MC grid voltage limit over (Upper limit/lower limit) → Operate with the previous process control result. | 1. Defective drum heater | Check the operation of the drum heater and replace it if necessary. |
| | | | 2. Defective developer/developing agent<br>• Improper tone density | • Check the operation of the toner sensor and replace it if necessary. |
| | | | • Deteriorated developer | • Replace the developer. |
| | | | 3. Defective photo-sensitizer<br>• Deteriorated photo-sensitizer | • Replace the photo-sensitizer. |
| F-2 | 35 (Not display) | The toner patch reference value exceeds the measurement patch range. → Operate with the previous process control result. | Same as F-2 33. | • Same as F-2 33. |
| | 37 | Defective adjustment of drum marking sensor gain → Machine stop (Japan/SEC) → Low density copy (Others) | 1. The drum marking sensor is not adjusted. | • Perform simulation 44-2. (Adjustment value: 178±55) |
| | | | 2. Dirt on the drum marking sensor | • Clean with soft cloth immersed in alcohol. |
| | | | 3. Defective drum marking sensor | • Replace the sensor. |
| | | | 4. Defective drum marking sensor PWB | • Replace the PWB. |

## (4) Exposure adjustment procedure

Use test chart UKOG0162FCZZ for the exposure adjustment.

① Put four or five white papers (120mm × 340mm) on the glass table with the center reference. (Use clean, white paper and do not use recycled paper.) Put the test chart (UKOG0162FCZZ) in front of the paper.




Test chart comparison table

| UKOG-0162FCZZ DENSITY No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | W |
|---|---|---|---|---|---|---|---|---|---|---|---|
| UKOG-0089CSZZ DENSITY No. | 0.1 | | 0.2 | | 0.3 | | | | 0.5 | 1.9 | 0 |
| KODAK GRAY SCALE | | 1 | | 2 | | 3 | | 4 | | 19 | A |

SHARP CORPRATION
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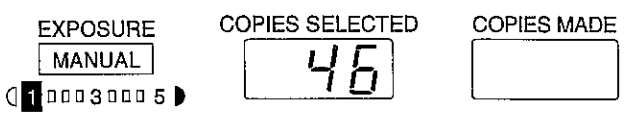
② Manual exposure mode adjustment
Perform simulation 46, and the following display will be given.

SIMULATION NO. 46
INPUT (450 - 800): NORMAL MODE
(TONER SAVE MODE: USE [→] KEY.)

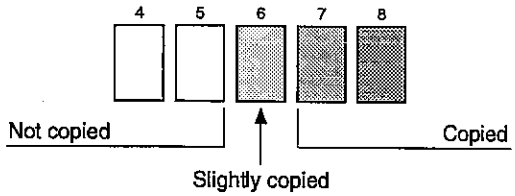


Check that the exposure display cursor shows "1."
If not, set to "1" with [◐] (LIGHT) key.

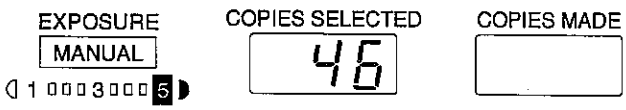
Make a copy.
Check that "6" of UKOG-0162FCZZ is slightly copied and "5" is not copied. (In the case of UKOG-0089CSZZ, check that 0.5 is clearly copied and 03 is not copied.)

<When too light> Reduce the number displayed in the copied quantity display.

<When too dark> Increase the number displayed in the copied quantity display.



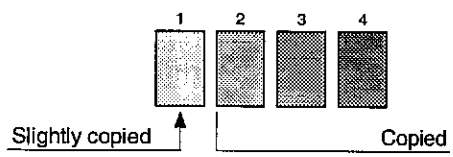

When the copy density is within the specified range, set to "5" with [◑] (DARK) key.




Check that the exposure display cursor shows "5."
Make a copy.
Check that "1" of UKOG-0162FCZZ is slightly copied and "W" is not copied. (In the case of UKOG-0089CSZZ, check that 0.1 is slightly copied and 03 or "0" is not copied.)

When too light Reduce the number displayed in the copied quantity display.

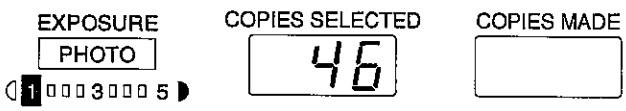
When too dark Increase the number displayed in the copied quantity display.




When the copy density is within the specified range, set to the photo mode with the exposure select key.

③ Photo mode adjustment

SIMULATION NO. 46
INPUT (450 - 800) NORMAL MODE
(TONER SAVE MODE: USE [-] KEY.)

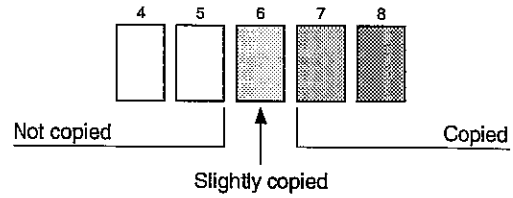



Check that the exposure display cursor shows "1."
If not, set to "1" with [◐] (LIGHT) key.

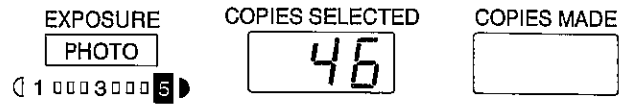
Make a copy.
Check that "6" of UKOG-0162FCZZ is slightly copied and "5" is not copied. (In the case of UKOG-0089CSZZ, check that 0.5 is clearly copied and 03 is not copied.)

<When too light> Reduce the number displayed in the copied quantity display.

<When too dark> Increase the number displayed in the copied quantity display.




When the copy density is within the specified range, set to "5" with [◑] (DARK) key.



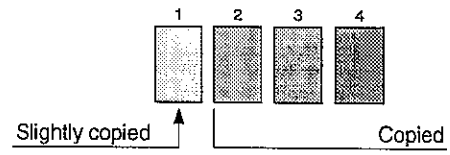

Check that the exposure display cursor shows "5."

Make a copy.

Check that "1" of UKOG-0162FCZZ is slightly copied and "W" is not copied. (In the case of UKOG-0089CSZZ, check that 0.1 is clearly copied and 03 or 0 is not copied.)

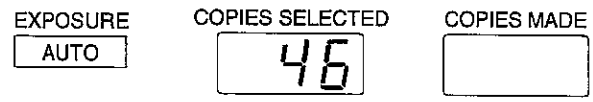
<When too light> Reduce the number displayed in the copied quantity display.

<When too dark> Increase the number displayed in the copied quantity display.




When the copy density is within the specified range, set to the automatic exposure mode with the exposure selection key.

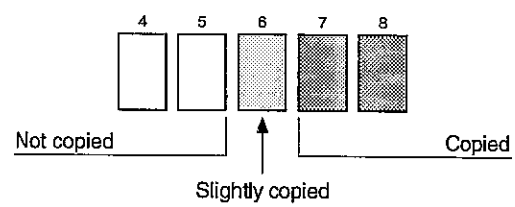
④ Auto exposure mode adjustment
SIMULATION NO. 46
INPUT (450 - 800): AUTO MODE
(TONER SAVE MODE: USE [→] KEY.)




Make a copy.
Check that "3" of UKOG-0162FCZZ is slightly copied and "2" is not copied. (In the case of UKOG-0089CSZZ, check that 0.2 is clearly copied 0.1 is not copied.)

<When too light> Reduce the number displayed in the copied quantity display.

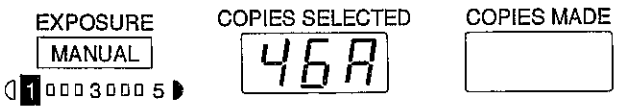
<When too dark> Increase the number displayed in the copied quantity display.




When the copy density is within the specified range, set to the manual exposure TSM mode with [→] key.

⑤ Manual exposure (TSM) mode adjustment

SIMULATION NO. 46
INPUT (450 - 800): TONER SAVE MODE
(NORMAL MODE: USE [→] KEY.)

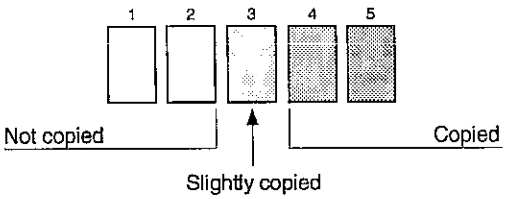



Check that the exposure display cursor shows "1."
If not, set to "1" with [◐] (LIGHT) key.

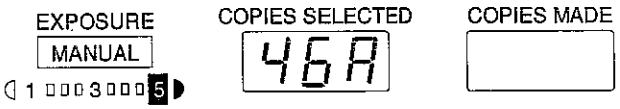
Make a copy.
Check that "6" of UKOG-0162FCZZ is slightly copied and "5" is not copied. (In the case of UKOG-0089CSZZ, check that 0.5 is clearly copied and 03 is not copied.)

When too light — Reduce the number displayed in the copied quantity display.

When too dark — Increase the number displayed in the copied quantity display.




When the copy density is within the specified range, set to "5" with [◑] (DARK) key.



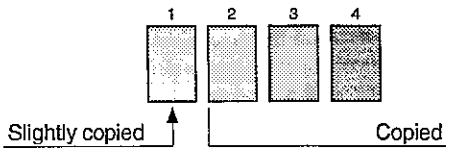

Check that the exposure display cursor shows "5."

Make a copy.

Check that "1" of UKOG-0162FCZZ is slightly copied and "W" is not copied. (In the case of UKOG-0089CSZZ, check that 0.5 is slightly copied and 03 and 0 ????? are not copied.)

<When too light> Reduce the number displayed in the copied quantity display.

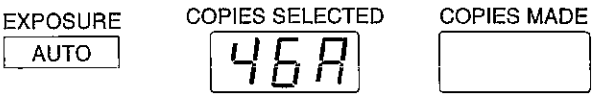
<When too dark> Increase the number displayed in the copied quantity display.




When the copy density is within the specified range, set to the auto exposure (TSM) mode with the exposure selection key.

⑥ Auto exposure (TSM) mode adjustment

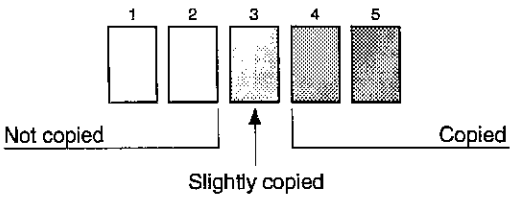
SIMULATION NO. 46
INPUT (450 - 800): TONER SAVE MODE
(NORMAL MODE: USE [→] KEY.)




Make a copy.
Check that "3" of UKOG-0162FCZZ is slightly copied and "2" is not copied. (In the case of UKOG-0089CSZZ, check that 0.2 is slightly copied and 0.1 is not copied.)

<When too light> Reduce the number displayed in the copied quantity display.

<When too dark> Increase the number displayed in the copied quantity display.




When the copy density is within the specified range, the picture quality adjustment is completed.

## (5) Exposure adjustment procedure

| Procedure | Adjustment item | Setting level | UKOG-0162FCZZ copy | | |
|---|---|---|---|---|---|
| | | | Copied | Slightly copied | Not copied |
| 1 | Sim 46 execution | | | | |
| 2 | Manual mode exposure adjustment | EXP.N-1 | 7 | 6 | 5 |
| | | EXP.N-5 | 2 | 1 | W |
| 3 | Photo mode exposure adjustment | EXP.P-1 | 7 | 6 | 5 |
| | | EXP.P-5 | 2 | 1 | W |
| 4 | N-AE mode exposure adjustment | N-AE | 4 | 3 | 2 |
| 6 | Switch to the toner save mode | | | | |
| 7 | Toner save mode exposure adjustment | EXP.T/S-1 | 7 | 6 | 5 |
| | | EXP.T/S-5 | 2 | 1 | W |
| 8 | T/S-AE mode exposure adjustment | T/S-AE | 4 | 3 | 2 |
| 9 | Completion of exposure adjustments | | | | |

※ After execution of simulation 46, the machine enters the process control mode and the copy lamp lights up for several sec.

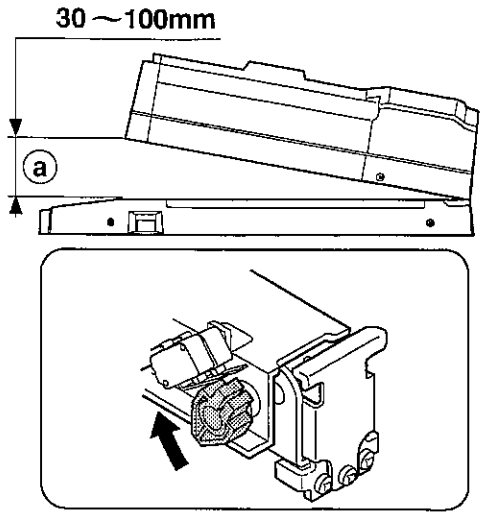
# 9. UDH adjustments

## (1) UDH open/close detecting switch (UDSW1) detecting timing adjustment

① At a distance of (a) =30mm, slowly rotate the cam, and fix it with a screw tentatively at the position where UDSW1 turns on. (UDSWl1 is positioned outside.)

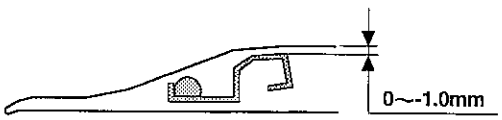
② Open the UDH and check that UDSW1 turns off at distance (a) = 30 – 100mm.

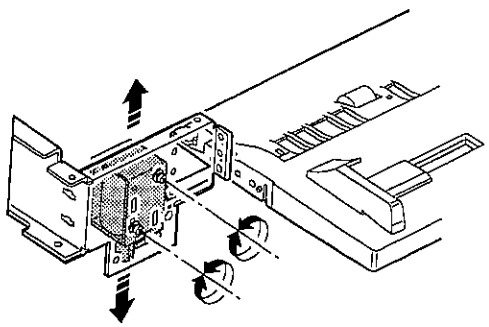
③ Slowly close the UDH and check that UDSW1 turns on at distance (a) = 20 mm.




## (2) Document feed gate height adjustment

Adjust so that the manual stopper upper surface is 0 ~ 1.0 mm from the manual paper feed guide surface when the document manual feed gate solenoid (UHGSOL) is manually turned on.



## (3) UDH magnet catch height adjustment

With the UDH closed, visually check that magnet is making contact and the clearance between the white rubber and the operation cabinet is within 1 mm (visual check). Adjust if necessary.

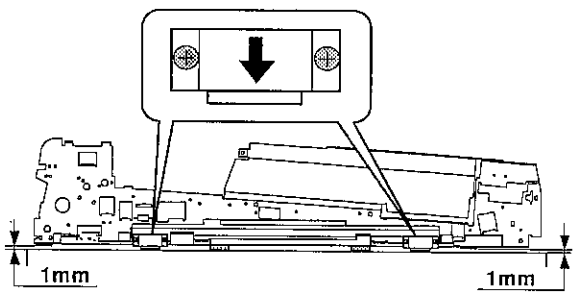
① With the UDH open, ensure that it is not warped. If distortion is observed, adjust the unit so that the UDH body and the table glass are in parallel with each other.

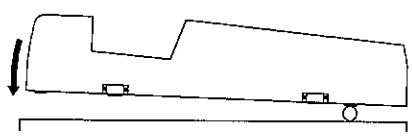
② The magnet (F/R) must be attached.
Check that the clearance (left and right) between the white rubber and the operation cabinet is within 1mm. (Visual check)
If the clearance between the white rubber and the operation cabinet is 1mm or more, perform procedures ③ to ⑤.

③ Loosen the magnet fixing screw.

④ Insert the thickness gauge (3mm) as shown in the figure.

⑤ While pressing the UDH downwards, tighten the screw which was loosened in procedure ③.
At that time, attach the magnet so that it is in parallel with he catch section .



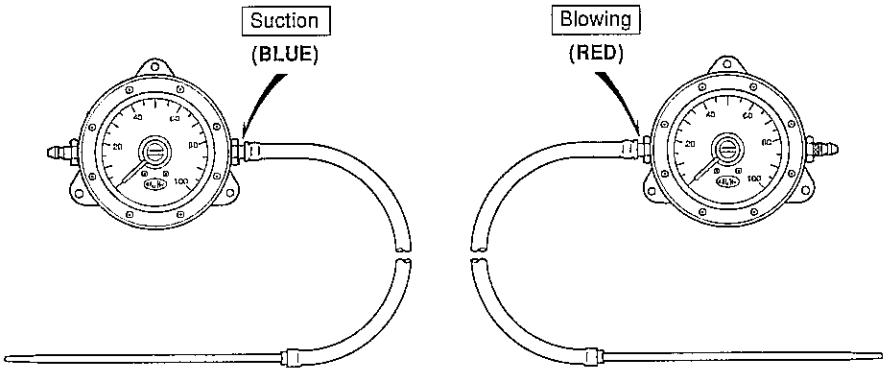



## (4) Suction/blow air pressure measurement

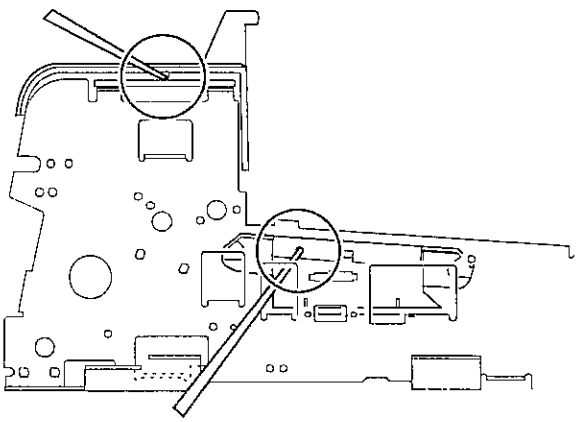
**(Specified value of air pressure)**

① Check that the indicator of the air pressure gauge meter "0" (mmH2O). If not, turn the correction knob to adjust to "0" (mmH2O).

Air pressure meter and tube (P/N: UKOG-0178FCZZ)
Air pressure measurement nozzle: (P/N: UKOG-0179FCZZ)




② The table below shows the air pressure measurement points and the specified range.

| Duct | Suction duct ※1 | Blow duct ※2 |
|---|---|---|
| Specified range | About 40mm$H_2O$ or more | (Max.) about 32 mm$H_2O$ |
| Simulation | 2 → 3 → 1 | 2 → 3 → 2 |
| Measurement point |  | |

※1: When measuring the suction duct air pressure, be sure to measure with the paper sucked on the paper feed belt.
※2: When measuring the blow air cut air pressure, open the blow valve completely.
Manually turn motor (UBVM) gear to open the valve.

# 10. Finisher

## (1) Pusher adjustment

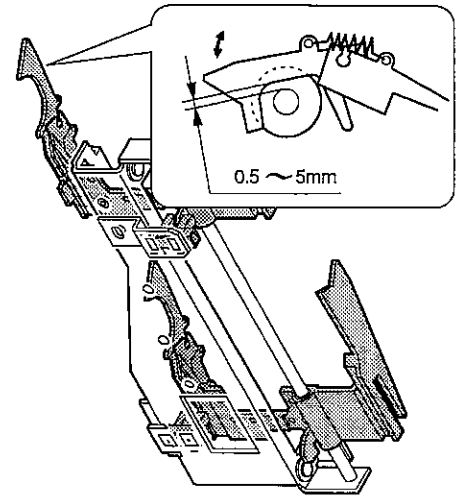
The pusher pushes out the stapled papers. If the pushing amount is improper, the following troubles will occur.

- When pushing amount is insufficient: The rear edge of paper remains in the paper exit section.
- When the pushing amount is excessive: Papers are pushed too much to be placed diagonally on the tray.

Pusher pushing amount can be adjusted by changing the moving time from turning on the pusher home position sensor.

① Perform simulation 54-2.

② Adjust so that the above troubles may not occur by entering numbers in simulation 54-2.

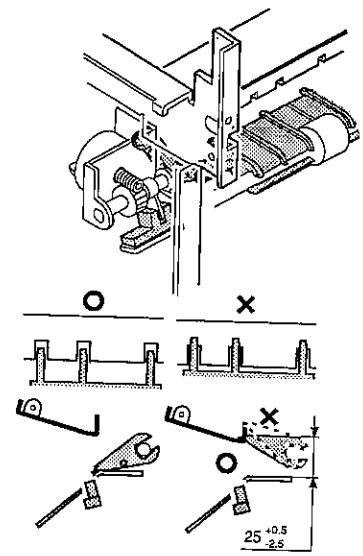



## (2) Mode select gate adjustment

Papers discharged from the fuser section are sent to the offset tray section or to the staple tray section. It is determined by the finisher mode select gate.
Adjust so that the mode select gate is in a close contact with the staple tray in the staple mode and that the gate tip is not caught by the paper guide in the offset mode.
The mode select gate falling amount can be adjusted by changing the moving time from turning on the gate home position sensor.

① Perform simulation 54-1.

② Adjust with simulation 54-1 so that the above state is kept.
(Adjustment range: 0 – 99)

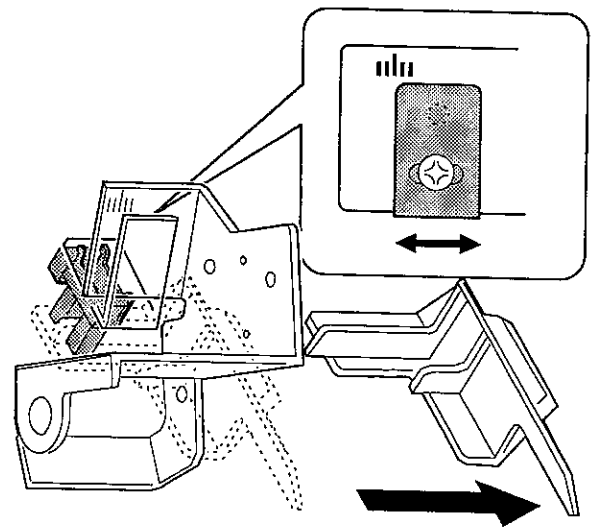



## (3) Jogger home position adjustment

The jogger moving time is adjusted in the staple mode to align papers.
The jogger moving amount from the home position is determined according to the copy paper size.

① Set a few document papers on the UDH and make copies in the staple mode.

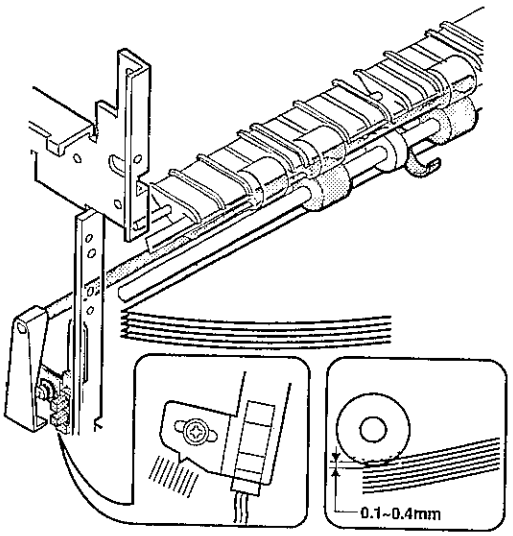
② Check alignment of papers. If alignment is improper, adjust the jogger home position sensor mounting position.



## (4) Offset tray upper limit position adjustment

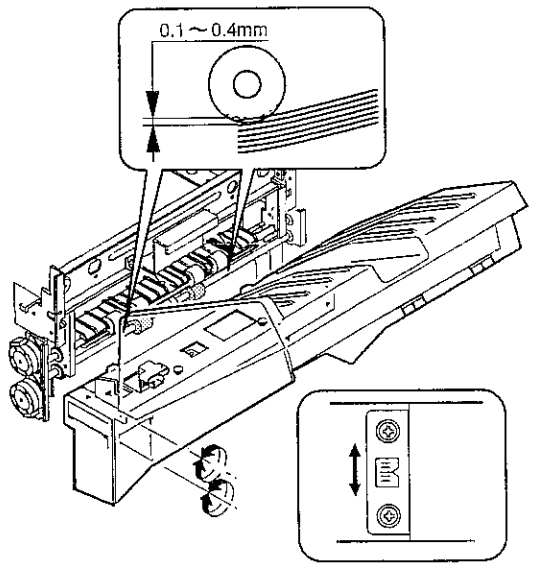
The offset tray upper limit is adjusted so that the paper at the top of the stack will not be shifted when the offset tray performs shifting operation and so that the paper rear edge may not be damaged by the paper exit roller lower when thin copy paper is used.

① Set a document on the platen glass and make a copy in the offset mode. Repeat this procedure to check shifting operation and the offset amount of paper.
If offset amount is improper, adjust the mounting position of the offset tray upper limit position sensor.
For the reference of the adjustment, check the "biting" amount of the lower paper exit roller (sponge).



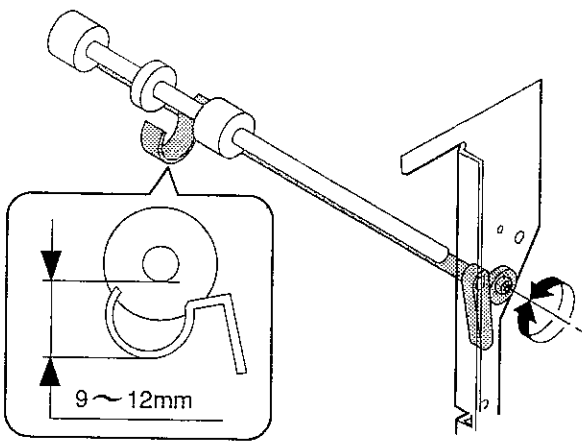

## (5) Offset trays (F and R) height balance adjustment

Adjust the shift unit height so that the "biting" amount (F and R) of the lower paper exit rollers (sponge) are the same.




## (6) Upper limit detecting switch lower limit position adjustment

Rotate the adjustment screw (eccentric screw) so that the upper limit switch actuator is positioned 9 ~ 12mm below the paper exit collar when the paper exit tray descends.




## (7) Staple tray paper sensor (FJPD) sensing level adjustment

Adjust the detection level of the staple tray paper sensor.

① Adjust with VR901 and 902 on the finisher control PWB.

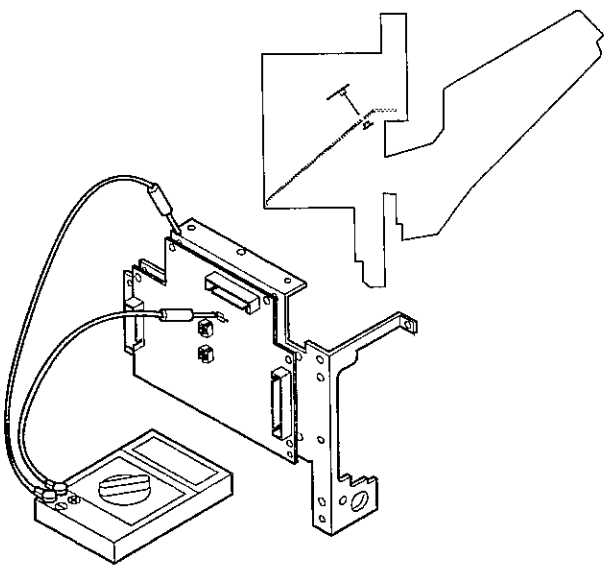
② Connect the ⊕ terminal of the multi tester with the check point JP901 (FJPD) on the control PWB.
Connect the GND terminal to check point JP902 (GND2) on the control PWB.

③ Without paper on the staple tray, adjust VR901 (rough adjustment) and VR902 (fine adjustment) to set the level to 3.2V – 3.8V.
[VR adjustment procedure]

**[Volume adjustment procedure]**

① Adjust VR901 (rough adjustment) to set to 0.8V ~ 3.8V.

② Adjust VR902 (fine adjustment) to set to 3.2V – 3.8V.



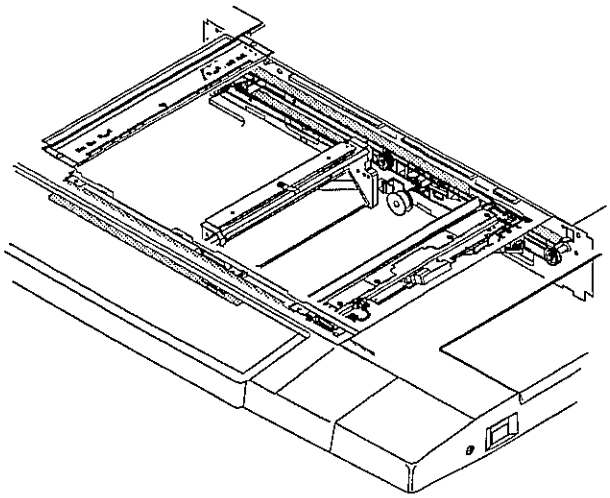
# [7] MAINTENANCE (SD-3062)

## 1. Timing

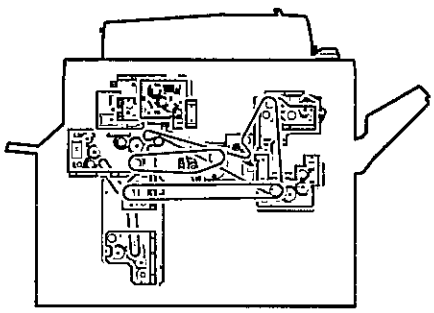
The maintenance of the SD-3062 should be performed every 125K copies.
<Remarks> ★= lubrication, ○=cleaning, △=adjustment, ▲=replacement/mounting, □=repositioning,
×=check (Perform cleaning, replacement, and adjustment as required.)

| Section | Part | Timing | | | | | | Remark |
|---|---|---|---|---|---|---|---|---|
| | | Installation | Service call | 125K | 250K | 375K | 500K | |
| Developer | Developer (Black) 2kg/250K | ▲ | | | ▲ | | ▲ | |
| | Toner cartridge (Black) 930g | ▲ | | | | | | User refill |
| | Developer seal | | | ○ | ○ | ○ | ▲ | |
| | DSD collar | | | ○ | ○ | ○ | ○ | |
| | Developer side seal F | (▲) | | ○ | ▲ | ○ | ▲ | |
| | Developer side seal R | (▲) | | ○ | ▲ | ○ | ▲ | |
| Drum | Drum | (▲) | | × | ▲ | × | ▲ | |
| | Blade | (▲) | | ▲ | ▲ | ▲ | ▲ | |
| | Toner receive seal | (▲) | | ○ | ▲ | ○ | ▲ | |
| | CL side seal F/R | (▲) | | ○ | ▲ | ○ | ▲ | |
| | Drum separation pawl | | | ○ | ▲ | ○ | ▲ | |
| | Charging plate unit (saw teeth) | | | ○ | ▲ | ○ | ▲ | |
| | Screen grid | | ○ | ○ | ▲ | ○ | ▲ | |
| | PTC wire | | ○ | ○ | ▲ | ○ | ▲ | |
| | TC/SC wire | | ○ | ○ | ▲ | ○ | ▲ | |
| | BL/DL lamp | | ○ | ○ | ○ | ○ | ○ | |
| | Charger case | | | ○ | ○ | ○ | ○ | |
| | Density sensor (ID) | | | ○ | ○ | ○ | ○ | Clean with the air brush. |
| | Marking sensor (MD) | | | ○ | ○ | ○ | ○ | |
| | Waste toner bottle | (▲) | | ▲ | ▲ | ▲ | ▲ | User replacement every 125K. |
| Suction | Suction belt | | ○ | ○ | ○ | ○ | ○ | |
| | Suction ozone filter | | | × | ○ | × | ○ | |
| | All filters | | | × | ○ | × | ○ | |
| Fuser | Upper heat roller | (▲) | | × | × | × | ▲ | |
| | Lower heat roller | (▲) | | × | ▲ | × | ▲ | |
| | Upper cleaning roller | ▲ | | ▲ | ▲ | ▲ | ▲ | |
| | Lower cleaning roller | ▲ | | ▲ | ▲ | ▲ | ▲ | |
| | Upper auxiliary cleaning roller | ▲ | | ▲ | ▲ | ▲ | ▲ | |
| | Upper separation pawl | (▲) | | □ | ▲ | □ | ▲ | |
| | Lower separation pawl | (▲) | | □ | ▲ | □ | ▲ | |
| | Thermistor | | | ○ | ○ | ○ | ○ | |
| | Heat roller gear | | | × | ○ | × | ▲ | Roller ass'y |
| | Curl correction belt | | | ○ | ○ | ○ | ○ | |
| Optical | Mirror/lens/reflector/each sensor | | ○ | ○ | ○ | ○ | ○ | |
| | Table glass/dust-proof filter | | ○ | ○ | ○ | ○ | ○ | |
| | Copy lamp | | | | × | | × | |
| | Optical rail | | | × | ★ | × | ★ | |
| | Drive wire/each pulley | | | | × | | × | |
| Duplex tray | Paper feed belt | | ○ | ○ | ○ | ○ | ○ | |
| | Transport rollers | | × | ○ | ○ | ○ | ○ | |
| | Sensors | | × | | × | | × | |
| Transport | Resist roller | | ○ | ○ | ○ | ○ | ○ | |
| | Transport rollers | | × | ○ | ○ | ○ | ○ | |
| | Sensors | | × | | × | | × | |
| | Paper guides | | × | | ○ | | ○ | |
| Drive | Gears | | | | ★ | | ★ | |
| | Belts | | | | × | | × | |
| Manual paper feed | Rollers | | ○ | ○ | ▲ | ○ | ▲ | |
| | Torque limiter | | | | ▲ | | ▲ | |
| Air paper feed | Paper feed belt | | ○ | ○ | ○ | ○ | ○ | |
| Copy quality | | △ | × | × | △ | × | △ | |

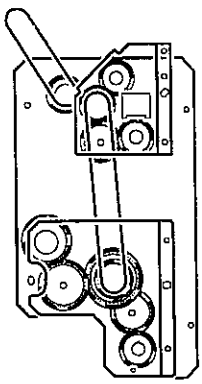
※ 1 Optical rail section
Apply white grease to the shaded area.



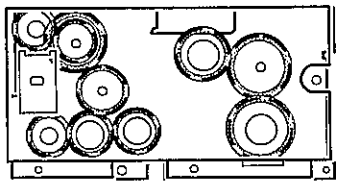
※ 2 Main body drive section
Apply white grease to the shaded area.



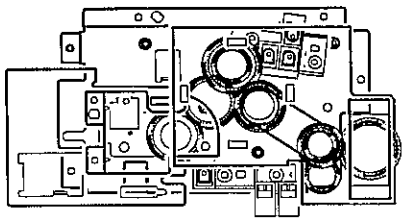
① Paper feed/transport drive section



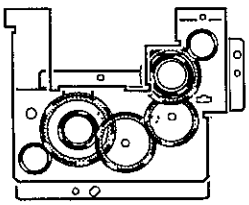
② Multi manual paper feed section



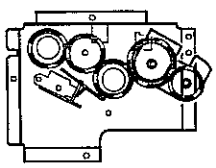
③ Drum drive section



④ Paper exit/reverse drive section



⑤ Fusing drive section



| Section | Parts | Timing | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Installation | Service call | 125K | 250K | 375K | 500K | Remark |
| UDH | Suction belt | | × | ○ | ○ | ○ | ○ | |
| | Transport rollers | | × | ○ | ○ | ○ | ○ | |
| | Sensors | | × | | × | | × | |
| | Dischanrge brush | | × | × | × | × | × | |
| | Transport belt | | × | ○ | ○ | ○ | ○ | |

| Section | Parts | Timing | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Installation | Service call | 125K | 250K | 375K | 500K | Remark |
| Finisher | Paper exit roller | × | | | × | | × | |
| | Transport rollers | | × | ○ | ○ | ○ | ○ | |
| | Sensors | | × | | × | | × | |
| | Staple tray | | ○ | ○ | ○ | ○ | ○ | |
| | Dischanrge brush | | × | × | × | × | × | |

## 2. List of Service tools and grease

| | Name | Parts code | Price rank |
|---|---|---|---|
| 1 | Gray scale chart | UKOG-0162FCZZ | FJ AT |
| 2 | Test chart | UKOG-0089CSZZ | DP AF |
| 3 | Digital tester | UKOGE0043CS01 | YA CU |
| 4 | Electrode harness | DHAi-0304FCZZ | FP AV |
| 5 | Electrode sheet | UKOG-0110FCZZ | GD AY |
| 6 | Air pressure meter | UKOG-0178FCZZ | UC CB |
| 7 | Air pressure measuring nozzle | UKOG-0179FCZZ | HB BE |
| 8 | Thickness gauge | UKOGM0075CSZZ | GN BB |
| 9 | Grease | UKOG-0062FCZZ | FB AS |
| 10 | White grease (50g) | UKOG-0158FCZZ | FK AU |
| 11 | Starting powder | UKOG-0088CSZZ | FY AY |
| 12 | Air brush | UKOG-0049CSZZ | GJ BD |
| 13 | ADF belt cleaner | UKOG-0188FCZZ | FX AX |
| 14 | Cleaning paper | UKOG-0213FCZZ | EQ AM |

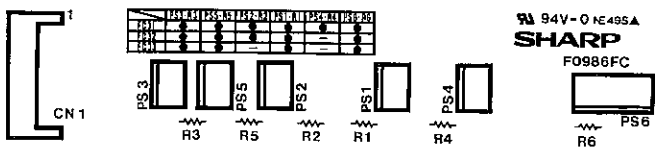
## 3. Others (Paper size detection)

### A. Paper feed tray section

| | Paper width detection | | | | | Paper length detection |
|---|---|---|---|---|---|---|
| | PS1 | PS2 | PS3 | PS4 | PS5 | PS6 |
| A4 | — | — | OFF | — | — | OFF |
| A3 | — | — | OFF | — | — | — |
| B5 | — | OFF | — | — | — | OFF |
| B4 | — | OFF | — | — | — | — |
| A4R | OFF | — | — | — | — | OFF |
| B5R | — | — | — | OFF | — | — |
| 11 × 8 1/2 | — | — | — | — | OFF | OFF |
| 11 × 17 | — | — | — | — | OFF | — |
| 8 1/2 × 11 | OFF | — | — | — | — | OFF |
| 8 1/2 × 13 | OFF | — | — | — | — | — |
| 8 1/2 × 14 | OFF | — | — | — | — | — |

OFF: The sensor is interrupted.
—: The sensor is ON.

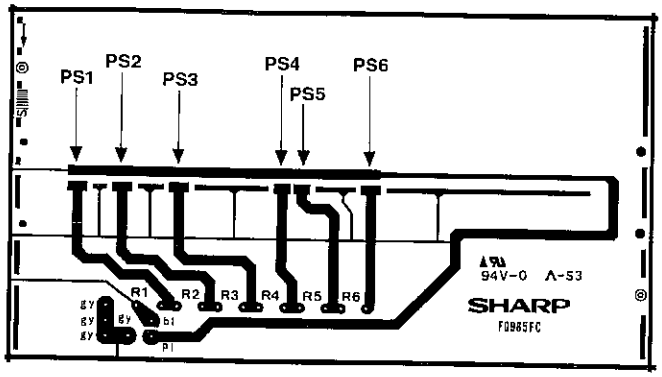
| Destination | R1/PS1 | R2/PS2 | R3/PS3 | R4/PS4 | R5/PS5 | R6/PS6 |
|---|---|---|---|---|---|---|
| Japan (FC31) | ○ | ○ | ○ | ○ | ○ | ○ |
| EXAB (FC32) | ○ | ○ | ○ | — | ○ | ○ |
| EXIN (FC33) | ○ | — | ○ | — | ○ | ○ |




### B. Manual feed section

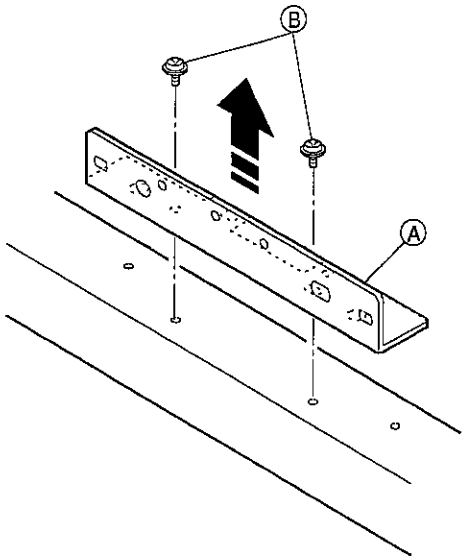
| | Paper width detection | | | | | | Paper length detection | |
|---|---|---|---|---|---|---|---|---|
| | PS1 | PS2 | PS3 | PS4 | PS5 | PS6 | MPSD1 | MPSD2 |
| A4 | C | — | — | — | — | — | OFF | OFF |
| A3 | C | — | — | — | — | — | ON | ON |
| B5 | — | — | C | — | — | — | OFF | OFF |
| B4 | — | — | C | — | — | — | ON | ON |
| A5 | — | — | — | — | C | — | OFF | OFF |
| A4R | — | — | — | — | C | — | ON | OFF |
| B5R | — | — | — | — | — | C | ON | OFF |
| 11 × 8 1/2 | — | C | — | — | — | — | OFF | OFF |
| 11 × 17 | — | C | — | — | — | — | ON | ON |
| 8 1/2 × 5 1/2 | — | — | — | C | — | — | OFF | OFF |
| 8 1/2 × 11 | — | — | — | C | — | — | ON | OFF |
| 8 1/2 × 13 | — | — | — | C | — | — | ON | ON |
| 8 1/2 × 14 | — | — | — | C | — | — | ON | ON |

C: The PWB contact is closed."
—: The PWB contact is open



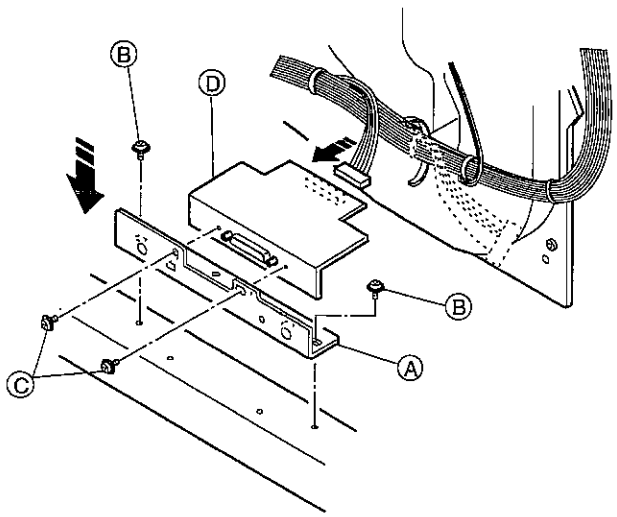

### C. RIC (Remote Interface Communication) PWB unit attachment

① Remove mounting angle Ⓐ from the rear chassis of the body. (Remove two screws Ⓑ.) Cut the band which is fixing the 15-pin connector.




② With two screws Ⓒ (LX-BZ0527FCZZ, accessories to the RIC PWB unit), attach RIC PWB unit Ⓑ to mounting angle Ⓐ.

③ Attach the mounting angle to the original position with two screws Ⓑ.



# [8] TEST COMMAND

## 1. Outline

This model is equipped with the test command feature which allows the following operations with the keys on the operation panel:

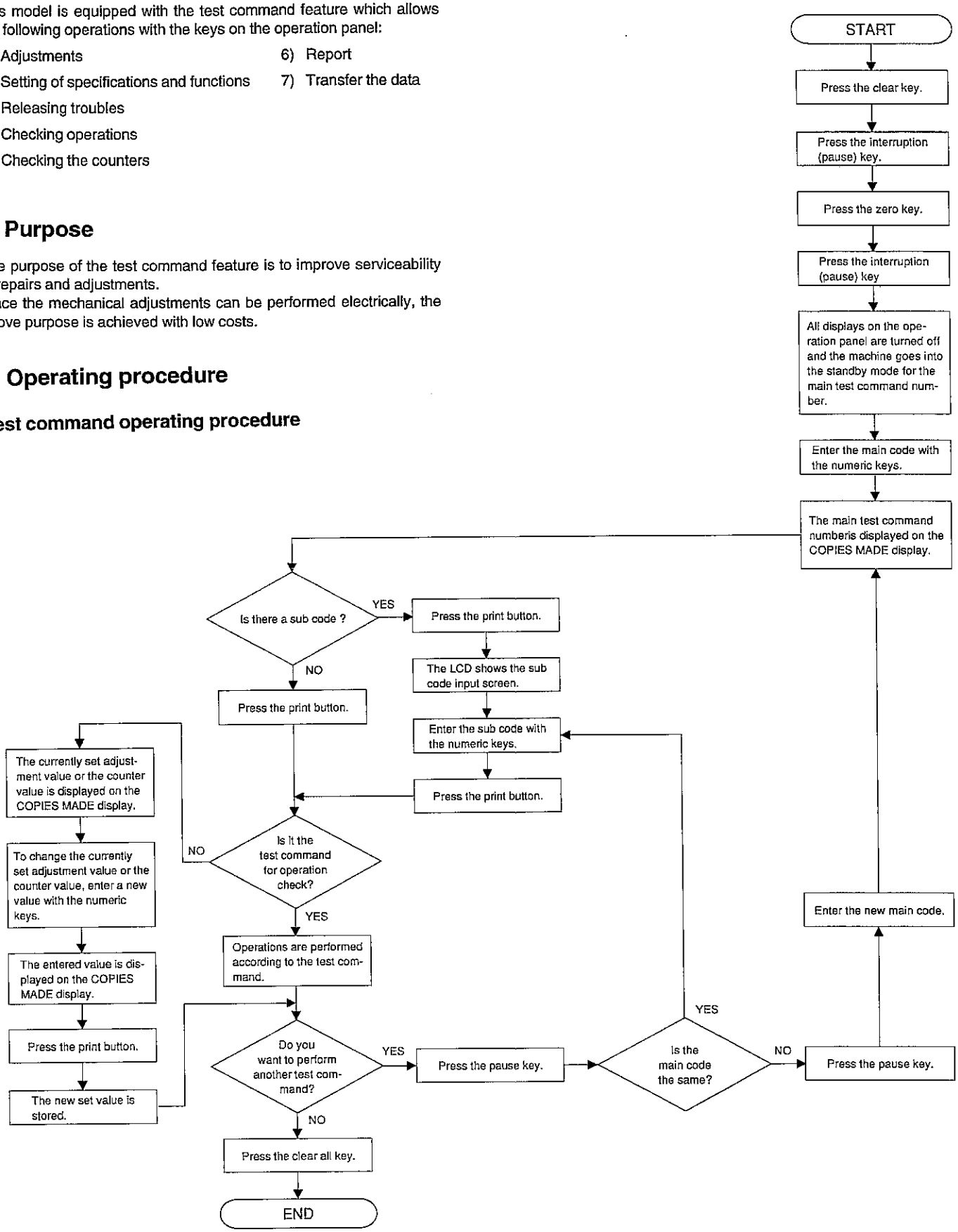
1) Adjustments
2) Setting of specifications and functions
3) Releasing troubles
4) Checking operations
5) Checking the counters
6) Report
7) Transfer the data

## 2. Purpose

The purpose of the test command feature is to improve serviceability in repairs and adjustments.
Since the mechanical adjustments can be performed electrically, the above purpose is achieved with low costs.

## 3. Operating procedure

### Test command operating procedure


START
Press the clear key.
Press the interruption (pause) key.
Press the zero key.
Press the interruption (pause) key
All displays on the operation panel are turned off and the machine goes into the standby mode for the main test command number.
Enter the main code with the numeric keys.
The main test command numberis displayed on the COPIES MADE display.
Is there a sub code ?
YES
NO
Press the print button.
The LCD shows the sub code input screen.
Enter the sub code with the numeric keys.
Press the print button.
The currently set adjustment value or the counter value is displayed on the COPIES MADE display.
To change the currently set adjustment value or the counter value, enter a new value with the numeric keys.
The entered value is displayed on the COPIES MADE display.
Press the print button.
The new set value is stored.
Is it the test command for operation check?
NO
YES
Operations are performed according to the test command.
Do you want to perform another test command?
YES
NO
Press the pause key.
Is the main code the same?
YES
NO
Enter the new main code.
Press the pause key.
Press the clear all key.
END

| Purpose | Section | Main | Sub | Function | Ref. page |
|---|---|---|---|---|---|
| Adjustment | Paper feed | 26 | 8 | Tray paper empty data setting | 8-4 |
| | | 51 | 2 | Resist amount setting | 8-5 |
| | | | 3 | Resist amount adjustment input | |
| | | | 4 | Brake clutch timer setting | 8-6 |
| | Paper transport | 51 | 1 | Separation pawl timing adjustment | |
| | Optical | 48 | 1 | Front/rear direction magnification ratio adjustment | |
| | | | 2 | Paper transport direction magnification ratio adjustment | 8-7 |
| | | | 3 | Lens characteristics input | |
| | | | 4 | No. 4/5 mirror characteristics input | 8-8 |
| | | | 5 | Mirror speed correction value input | |
| | | 50 | 1 | Lead edge image loss void area adjustment | 8-9 |
| | | | 2 | Lead edge adjustment (simple type) | 8-10 |
| | | | 3 | Lead edge adjustment value input | 8-11 |
| | | | 4 | Void amount adjustment value input | |
| | Process | 8 | 2 | (Normal) MC output adjustment | |
| | | | 3 | (Photo) MC output adjustment | |
| | | | 4 | (TSM) MC output adjustment | |
| | | | 5 | PTC output adjustment | |
| | | | 6 | TC output adjustment | |
| | | | 7 | SC output adjustment | |
| | | 44 | 2 | DM sensor output adjustment | 8-12 |
| | | | 3 | PS sensor output adjustment | |
| | Developer | 8 | 1 | Developing bias output adjustment | |
| | | 25 | 2 | Automatic developing adjustment | 8-13 |
| | RDH | 53 | 1 | SDF standard original stop position adjustment | |
| | | | 2 | SDH thin original stop position adjustment | |
| | | | 3 | UDH original stop position adjustment | |
| | UDH | 52 | 1 | ADU alignment plate stop position adjustment | 8-14 |
| | | | 2 | ADU rear edge plate stop position adjustment | |
| | Finisher | 54 | 1 | Transport gate stop position adjustment | |
| | | | 2 | Pusher pushing amount adjustment | |

| Purpose | Section | Main | Sub | Function | Ref. page |
|---|---|---|---|---|---|
| Setting | Paper feed | 26 | 2 | Tray 1 size setting | 8-15 |
| | Process | 26 | 7 | Drum sensitivity setting | |
| | | 44 | 1 | Process control inhibition/allow setting | 8-16 |
| | | | 4 | Process control reference value setting | |
| | Fuser | 43 | 5 | Fusing temperature setting | |
| | Auditor | 26 | 3 | Auditor mode setting | 8-17 |
| | RIC I/F | 27 | 1 | Communication rouble (U7-00) setting | |
| | | | 2 | PC/Modem TEL No. setting | 8-18 |
| | | | 3 | PC/Modem ID No. setting | |
| | | | 4 | Service start/end time recording | 8-19 |
| | | | 5 | Tag number setting | |
| Operation test | Operation panel | 5 | 1 | LED/LCD lighting check | 8-20 |
| | Paper feed | 6 | 3 | Tray lift motor operation check | |
| | | 30 | 1 | Machine sensor operation check | 8-21 |
| | | | 2 | Tray sensor operation check | 8-22 |
| | Paper transport | 6 | 1 | Transport system load operation check | 8-23 |
| | Optical | 1 | 1 | Mirror base scan operation check | |
| | | | 2 | Optical system sensor operation check | |
| | | | 3 | Lens operation check | |
| | | | 4 | Lens aging | 8-24 |
| | | 5 | 3 | Copy lamp lighting check | |
| | Process | 5 | 4 | Discharge lamp/BL lamp lighting check | |
| | | 7 | 5 | Process operation check | |
| | Developer | 10 | | Toner motor operation check | |
| | | 25 | 1 | Toner density sensor monitor | 8-25 |
| | Fuser | 5 | 2 | Heater lamp lighting check | |
| | RDH | 2 | 1 | RDH aging | |
| | | | 2 | RDH sensor operation check | |
| | | | 3 | RDH load operation check | 8-26 |
| | Finisher | 3 | 2 | Finisher sensor operation check | |
| | | | 3 | Finisher load operation check | |
| | Auditor | 28 | 1 | Printer CG print | 8-27 |
| | | | 2 | Printer test print | |
| | All units | 7 | 1 | Aging with JAM | 8-28 |
| | | | 2 | Aging without JAM | |
| | | | 3 | Aging without JAM/without fusing control | |
| | | | 4 | Warm-up omitting | |

| Purpose | Section | Main | Sub | Function | Ref. page |
|---|---|---|---|---|---|
| Operation test | All units | 7 | 6 | Intermittent aging | 8-28 |
| | | | 7 | Intermittent aging without paper | 8-29 |
| | Others | 6 | 2 | Paper feed fan motor operation check | |
| Check | Process | 44 | 7 | Process ID/mark sensor LED light quantity check | |
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| Purpose | Section | Main | Sub | Function | Ref. page |
|---|---|---|---|---|---|
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| Purpose | Section | Main | Sub | Function | Ref. page |
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| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Adjustment | Optical | 48 | 3 | Operation/ procedure | When the key operation of this simulation is performed, the currently set value is displayed on the COPIES MADE display.<br>There are three kinds of adjustment modes, which can be selected with the keys.<br>Each mode is displayed on the COPIES SELECTED display with numeral figures and alphabets (48A ~ 48C).<br>Enter the adjustment value with the numeric keys and press the print button, then the entered value will be set.<br>48A: Focus adjustment value in the reduction copy (No. 4/5 mirror moving rate in the reduction copy)<br>48B: Focus adjustment value in the normal copy (No. 4/5 mirror home position)<br>48C: Focus adjustment value in the enlargement copy (No. 4/5 mirror moving rate in enlargement copy)<br>The set value is related bi-directionally with the TC48-1 set value. A change in the set value of this command causes a change in the TC48-1 set values. | |
| | | | 4 | Purpose/ kind | Used to adjust the vertical copy magnification ratio by lens.<br>The above adjustment is performed by changing the lens home position and the lens moving rate.<br>This test command is partly same as TC48-1, however, this test command includes adjustments only and does not include copy operations. | |
| | | | | Operation/ procedure | When the key operation of this simulation is performed, the currently set value is displayed on the COPIES MADE display.<br>There are three kinds of adjustment modes, which can be selected with the keys.<br>Each mode is displayed on the COPIES SELECTED display with numerals and alphabets (48A ~ 48F).<br>Enter the adjustment value and press the print button, then the entered value will be set.<br>48A: Copy magnification ratio in the reduction copy (lens moving rate in the reduction copy)<br>48B: Copy magnification ratio in the normal copy (lens home position)<br>48C: Copy magnification ration in the enlargement copy (lens moving rate)<br>The set value of this command is related bi-directionally with the TC48-1 set value. A change in this set value causes a change in the TC48-1 set value. | |
| | | | 5 | Purpose/ kind | Used to adjust the horizontal (paper transport direction) copy magnification ratio.<br>The above adjustment is performed by changing the mirror scan speed (mirror motor RPM).<br>This command is partly same as TC48-2, however it performs setting only and does not perform copying. | |
| | | | | Operation/ procedure | When the key operation of this command is performed, the currently set value is displayed on the COPIES MADE display.<br>Enter the adjustment value and press the print button, then the entered value will be set.<br>A change in this set value by "1" causes a change in the copy magnification ratio by about 0.1%. The adjustment value can be selected in the range of 1 to 30, the corresponding change being –1.4% to +1.5%. | |

## SD-3062 Simulation List

### Operation

<table>
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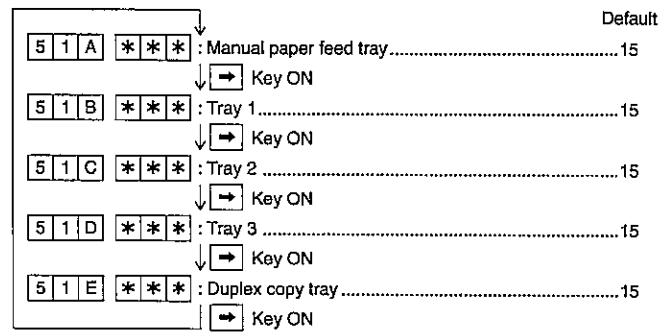
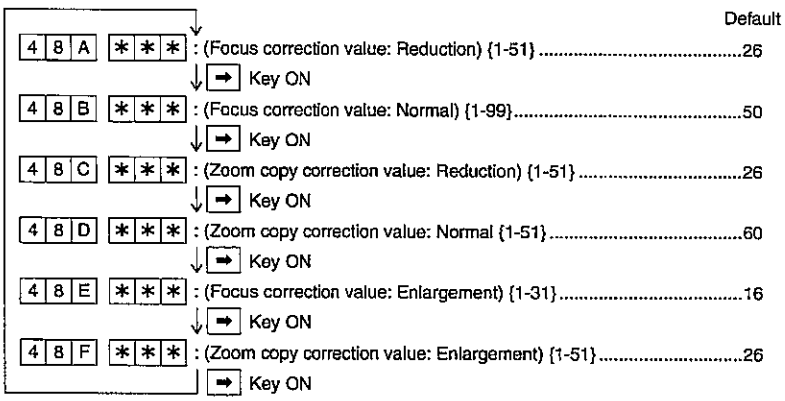
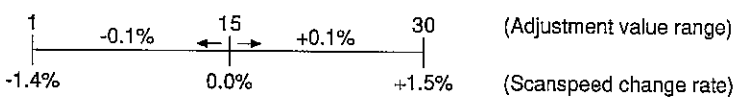
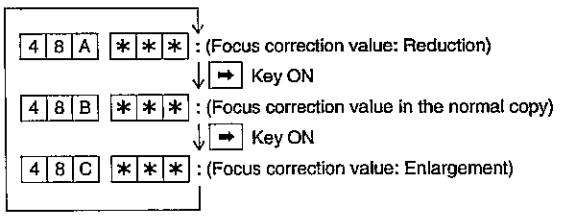
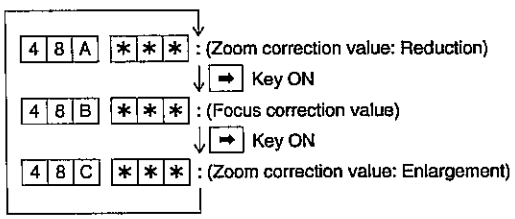
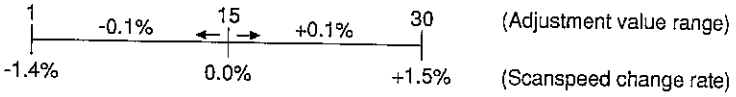
<tr><td>Adjustment</td><td>Paper feed</td><td>26</td><td colspan="3">SIMULATION NO.26<br>INPUT 1-8<br>1. OPTION SETUP.<br>2. TRAY1 SIZE SETUP.<br>3. AUDITOR SELECTION.<br>4. (NO PROGRAM)<br>5. COUNTER MODE SETUP.<br>6. DESTINATION SETUP.<br>7. DRUM SENSITIVITY SETUP.<br>8. TRAY EMPTY DATA SETUP.</td><td></td></tr>
<tr><td></td><td></td><td></td><td>8</td><td>Purpose/ Function</td><td>Used to adjust the shift up amount of the copy paper tray.</td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td>Operation/ Procedure</td><td>The adjustment is provided for the three kinds of paper trays. To select the set screen for each paper tray, use → key.<br>The range of set values is 1 to 10. Enter the set value with numeric keys, press the print button, and the set value will be displayed on the COPIES MADE display.<br>(Meaning of the set value)<br>When the number of paper on the paper tray decreases or becomes zero, the paper empty detector turns active. Then the paper tray performs shift up operation.<br>The shift up amount can be adjusted with this test command.<br>Since the shift up amount is determined by the shift up motor ON time, it is adjusted by adjusting the shift up motor ON time.<br>Paper empty is judged by the state (active or not) of the paper empty detector after shift up.<br>When the set value is improper, the following troubles may occur.<br>When the set value is too small (shift up amount is too small), paper does not make contact with the paper empty detector, and the paper empty detector may judge it as paper empty though paper exists.<br>When the set value is too great (shift up amount is too great), and when only small amount of paper is left, the clearance between the paper and the paper tray becomes small. Then paper is clogged in that small clearance to cause a misfeed.<br>The standard set value is "12", but the set value may be changed according to the paper quality.<br>If the set value is made greater, the shift up motor ON time is lengthened to make the shift up amount greater.<br>The shift up motor ON time changes by 10ms for set value "1."<br><br>SIMULATION NO.26-8<br>INPUT TRAY-1 EMPTY DATA (1-30)<br>⇩ [➡] Key ON<br>SIMULATION NO.26-8<br>INPUT TRAY-2 EMPTY DATA (1-30)<br>→ [➡] Key ON<br>⇩ [➡] Key ON<br>SIMULATION NO.26-8<br>INPUT TRAY-3 EMPTY DATA (1-30)<br><br>Adjustment content<br>26-8A: (Tray 1)<br>26-8B: (Tray 2)<br>26-8C: (Tray 3)<br>Adjustment range: ABC 1 – 30 (*10ms)</td><td></td></tr>
</table>

| Purpose | Section | Main code | Sub code | | Description | Ref. page |
|---|---|---|---|---|---|---|
| Adjustment | Paper feed | 51 | | | SIMULATION NO.51<br>INPUT 1-4<br>1. PSPS TIMING ADJUSTMENT.<br>2. RRC PAPER BUCKLE ADJUSTMENT.<br>3. RRC PAPER BUCKLE ADJUSTMENT. (INPUT)<br>4. BRAKE CLUTCH TIMER SET. | |
| | | | 2 | Purpose/ Function | Used to adjust the copy paper contact pressure on the resist roller in each paper feed mode.<br>This adjustment should be performed when there is considerable variations in the image position relative to the copy paper. | |
| | | | | Operation/ Procedure | When the key operation of this test command is performed, the currently set value is displayed on the COPIES MADE display.<br>There are five kinds of adjustments which can be selected with the keys. Each mode is displayed on the COPIES SELECTED display with numerals and alphabets (A ~ D).<br>When the adjustment value is entered with the numeric keys and the print button is pressed, the input value is set.<br>By changing the time required for the resist roller (RRC) to turn on after the transport roller clutch (TRC2) ON, the copy paper contact pressure on the resist roller is adjusted. The greater the time difference is, the greater the contact pressure is.<br>The contact pressure is made greater when there is a greater variations in the image position relative to the copy paper.<br>If the contact pressure is too great, however, a misfeed may occur. The set value must be adjusted according to the paper quality.<br>  <br><br>51A: Adjustment value (in the manual paper feed mode) of time interval from the transport roller clutch (TRC2) ON to the resist roller (RRC) ON.<br>51B: Adjustment value (in the paper feed tray 1 paper feed mode) of time interval from the transport roller clutch (TRC2) ON to the resist roller (RRC) ON.<br>51C: Adjustment value (in paper feed tray 2 paper feed mode) of time interval from the transport roller clutch (TRC2) ON to the resist roller (RRC) ON.<br>51D: Adjustment value (in the paper feed tray 3 paper feed mode) of time interval from the transport roller clutch (TRC2) ON to the resist roller (RRC) ON.<br>51E: Adjustment value (in the duplex tray paper feed mode) of time interval from the transport roller clutch (TRC2) ON to the resist roller (RRC) ON.<br>The set value can be set in the range of 0 ~ 50. A change in the set value by "1" causes a change in the timing by about 1ms.<br>The set value is relayed bi-directionally with the set value of TC51-3. When the set value of this command is changed, the TC51-23 set value is also changed accordingly. | |
| | | | 3 | Purpose/ Function | Used to adjust the paper contact pressure on the resist roller in the main body.<br>The content is the same as TC51-2, but copy operation is not performed in this command. | |

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Adjustment | Paper feed | 51 | 3 | Operation/ procedure | Same as simulation 51-2. However, copy operation is not performed.<br>The set value is relayed bi-directionally with the set value of TC51-2. When the set value of this command is changed, the TC51-2 set value is also changed accordingly.<br>Default<br>[5][1][A] [*][*][*] : Manual paper feed tray .....15<br>[➡] Key ON<br>[5][1][B] [*][*][*] : Tray 1 .....15<br>[➡] Key ON<br>[5][1][C] [*][*][*] : Tray 2 .....15<br>[➡] Key ON<br>[5][1][D] [*][*][*] : Tray 3 .....15<br>[➡] Key ON<br>[5][1][E] [*][*][*] : Duplex copy tray .....15<br>[➡] Key ON | |
| | | | 4 | Purpose/ function | Used to adjust the time interval from detection of the copy paper lead edge by PPD3 to the transport roller clutch (TRC2/TRC1) OFF.<br>This test command adjusts the stop position of copy paper before making contact with the resist roller. | |
| | | | | Operation/ procedure | When the key operation of this test command is performed, the currently set value is displayed on the COPIES MADE display.<br>Enter the adjustment value with the numeric keys and press the print button, then the input value will be set.<br>The standard set value is "25." When the set value is too small, the copy paper may not be taken properly by the resist roller, causing variations in image positions on the copy paper. When the set value is too large, the copy paper may be taken too much by the resist roller, causing a misfeed.<br>The set value can be selected in the range of 0 – 50. A change in the set value by "1" causes a change in the timing by about 1ms. | |
| | Paper transport | | 1 | Purpose/ function | Used to adjust the photoconductor drum separation pawl ON timing. | |
| | | | | Operation/ procedure | Used to set the time interval from RRC ON and delivery of a copy paper to the transport section to the separation pawl ON.<br>The set value can be set in the range of 0 ~ 20. A change in the set value by "1" causes a change in the timing by about 10ms.<br>SIMULATION NO.51-1<br>INPUT PSPS TIMING.<br>(0~20) | |
| | Optical | 48 | | | SIMULATION NO.48<br>INPUT 1-5<br>1. FRONT/REAR MAGNI ADJUSTMENT.<br>2. MAGNI RATIO FINE ADJUSTMENT.<br>3. LENS SPECIAL. (INPUT)<br>4. 4/5 MIRROR SPECIAL. (INPUT)<br>5. MAGNI RATIO FINE ADJUSTMENT. (INPUT)<br>1, 2: Make a copy and adjust<br>3, 4, 5: Direct input adjustment | |
| | | | 1 | Purpose/ function | Used to adjust the vertical copy magnification ratio and the focus by the lens.<br>The adjustment is performed by changing the lens home position, the lens moving rate, No. 4/5 mirror base home position, and No. 4/5 mirror base moving rate. | |

| Purpose | Section | Main code | Sub code | Description | Ref. page |
|---|---|---|---|---|---|
| Adjustment | Optical | 48 | 1 | **Operation/ procedure**<br>When the key operation of this test command is performed, the currently set value is displayed on the COPIES MADE display.<br>There are six adjustment modes in total, which can be selected with the keys.<br>Each mode is displayed on the COPIES SELECTED display with numeral figures and alphabets (48A ~ 48F).<br>Enter the adjustment value with the numeric keys and press the print button, then a copy will be made and the input value will be set.<br>48A: Focus adjustment value in the reduction copy (Lens moving rate in the reduction copy)<br>48B: Focus adjustment value in the normal copy (Lens home position)<br>48C: Copy magnification ratio adjustment value in the reduction copy (No. 4/5 mirror moving rate in the reduction copy)<br>48D: Copy magnification ratio adjustment value in the normal copy (No. 4/5 mirror home position)<br>48E: Focus adjustment value in the enlargement copy (Lens moving rate in enlargement copy)<br>48F: Copy magnification ratio adjustment value in the enlargement copy (No. 4/5 mirror moving rate)<br>  <br><br>{ }: Setting value range<br>The set value is relayed bi-directionally with the set value of TC48-3. When the set value is changed, the TC48-3 set value is also changed accordingly. | |
| | | | 2 | **Purpose/ function**<br>Used to adjust the horizontal (paper transport direction) copy magnification ratio.<br>The adjustment is performed by changing the mirror scan speed (mirror motor RPM). | |
| | | | | **Operation/ procedure**<br>When the key operation of this simulation is performed, the currently set value is displayed on the COPIES MADE display.<br>Enter the adjustment value with the numeric keys and press the print button, then a copy will be made and the entered value will be set.<br>A change in the set value by "1" causes a change in the copy magnification ratio by about 0.1%.<br>The adjustment value can be selected in the range of 1 to 30, and the range of effective change is –1.4% to +1.5%.<br>  <br><br>The set value of this test command is relayed bi-directionally with the TC48-5 set value. When the set value is changed, the TC48-5 set value is also changed. | |
| | | | 3 | **Purpose/ function**<br>Used to adjust the focus of the No. 4/5 mirror (vertical direction).<br>The adjustment is performed by changing the lens home position and the len smoving rate.<br>The adjustment is the same as TC48-1, however copy operation is not performed in this command. | |

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Adjustment | Optical | 48 | 3 | Operation/ procedure | When the key operation of this simulation is performed, the currently set value is displayed on the COPIES MADE display.<br>There are three kinds of adjustment modes, which can be selected with the keys.<br>Each mode is displayed on the COPIES SELECTED display with numeral figures and alphabets (48A – 48C).<br>Enter the adjustment value with the numeric keys and press the print button, then the entered value will be set.<br>48A: Focus adjustment value in the reduction copy (No. 4/5 mirror moving rate in the reduction copy)<br>48B: Focus adjustment value in the normal copy (No. 4/5 mirror home position)<br>48C: Focus adjustment value in the enlargement copy (No. 4/5 mirror moving rate in enlargement copy)<br>  <br><br>The set value is related bi-directionally with the TC48-1 set value. A change in the set value of this command causes a change in the TC48-1 set values. | |
| | | | 4 | Purpose/ kind | Used to adjust the vertical copy magnification ratio by lens.<br>The above adjustment is performed by changing the lens home position and the lens moving rate.<br>This test command is partly same as TC48-1, however, this test command includes adjustments only and does not include copy operations. | |
| | | | | Operation/ procedure | When the key operation of this simulation is performed, the currently set value is displayed on the COPIES MADE display.<br>There are three kinds of adjustment modes, which can be selected with the keys.<br>Each mode is displayed on the COPIES SELECTED display with numerals and alphabets (48A – 48F).<br>Enter the adjustment value and press the print button, then the entered value will be set.<br>48A: Copy magnification ratio in the reduction copy (lens moving rate in the reduction copy)<br>48B: Copy magnification ratio in the normal copy (lens home position)<br>48C: Copy magnification ration in the enlargement copy (lens moving rate)<br>  <br><br>The set value of this command is related bi-directionally with the TC48-1 set value. A change in this set value causes a change in the TC48-1 set value. | |
| | | | 5 | Purpose/ kind | Used to adjust the horizontal (paper transport direction) copy magnification ratio.<br>The above adjustment is performed by changing the mirror scan speed (mirror motor RPM).<br>This command is partly same as TC48-2, however it performs setting only and does not perform copying. | |
| | | | | Operation/ procedure | When the key operation of this command is performed, the currently set value is displayed on the COPIES MADE display.<br>Enter the adjustment value and press the print button, then the entered value will be set.<br>A change in this set value by "1" causes a change in the copy magnification ratio by about 0.1%. The adjustment value can be selected in the range of 1 to 30, the corresponding change being –1.4% to +1.5%. | |

| Purpose | Section | Main code | Sub code | Description | Ref. page |
|---|---|---|---|---|---|
| Adjustment | Optical | 48 | 5 | Operation/ procedure<br>  <br><br>The set value of this command is related bi-directionally with the TC48-2 set value. When this set value is changed, the TC48-2 set value is also changed accordingly. | |
| | | 50 | | SIMULATION NO.50<br>INPUT 1-4<br>1. LEAD EDGE, LEAD EDGE VOID AREA ADJUSTMENT<br>2. LEAD EDGE ADJUSTMENT. (EASY)<br>3. LEAD EDGE/VOID ADJUSTMENT. (INPUT)<br>4. VOID ADJUSTMENT. | |
| | | | 1 | Purpose/ kind: Used to adjust the copy image position and the void area (image loss) on the copy paper. | |
| | | | | Operation/ procedure: The adjustment is performed by changing four set values of A, B, C, and D.<br>When the key operation of this command is performed, the currently set value is displayed on the COPIES MADE display.<br>There are four kinds of adjustments, which can be selected with the keys.<br>Each mode is displayed on the COPIES SELECTED display with numeral figures and alphabets (A – D).<br>Enter the adjustment value with the numeric keys and press the print button, then a copy will be made and the entered value will be set. | |

Default

50A [***] : Distance between MHP and the image laed edge (1 count = 0.22mm) { 0-99} ..... 0

[➡] Key ON

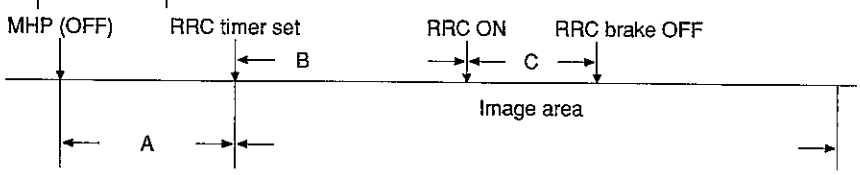
50B [***] : Time interval from the image lead edge to RRC ON (1 count = 0.5ms) {0-99} ..... 0

[➡] Key ON

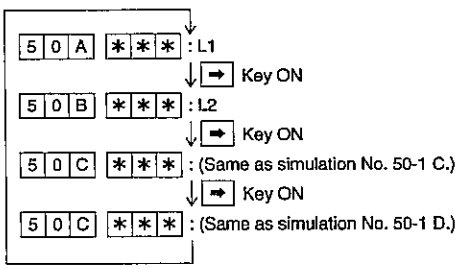
50C [***] : Time interval from RRC ON to PSBRK OFF (1 count = 1ms) {1-20} ..... 0

[➡] Key ON

50D [***] : Void amount data (1 count = 0.5mm) {0-20} ..... 0

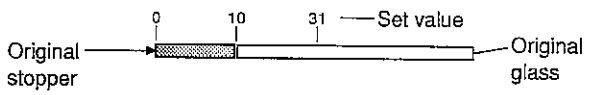
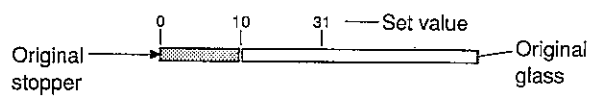



50A: This value is used to align the image lead edge position of the original with the image lead edge on the photoconductor drum.
The timing when the mirror unit starts scanning and the mirror home position sensor (MHPS) turns off should be used as the reference to make the mirror unit moving distance until it comes to the original lead edge reference position and the rotating distance on the photoconductor drum equal to each other.
The moving distance is calculated by counting the rotary encoder pulses from the mirror motor.
The lead edge reference position of a normal original is at the edge of the original glass. However, it can be adjusted by this test command arbitrarily. If this set value is not proper, that is, if it is not at the lead edge reference position, the lead edge image position on the copy paper is varied by the copy magnification ratio.
The set value can be selected in the range of 0 to 99. A change in the set value by "1" causes a change in the lead edge reference position by about 0.22mm.

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Adjustment | Optical | 50 | 1 | Operation/ procedure | 50B: Used to adjust the image position on the photoconductor and the copy paper position.<br>This adjustment is performed by adjusting the time interval from exposure at the image lead edge on the photoconductor drum to the start of rotation of the resist roller.<br>RRc ON timing, that is, the copy paper transport timing from the resist roller section is aligned with the image position of the photoconductor which is rotating for exposure.<br>The set value can be set in the range of 0 to 99. A change in the set value by "1" causes a change in the timing by about 0.5mm.<br>(Note) Since the positions of the image on the photoconductor and the copy paper are actually determined by this set value and the set value of TC50-01 50C, the set value of TC50-01 50C must be set properly before the adjustment.<br>50C: Used to adjust the brake time of the resist roller.<br>This adjustment is performed by changing the time interval from RRC ON to PSBRK OFF.<br>When this adjustment value is changed, the relative positions of the image on the photoconductor and the copy paper are changed.<br>This adjustment should be performed before setting of TC50-01 50B.<br>The standard set value is "10" and the set value can be selected in the range of 0 to 20.<br>A change in this set value by "1" causes a change in the timing by about 1ms.<br>50D: Used to adjust the void area amount at the lead edge of the copy paper.<br>The timing when the mirror unit starts scanning and the mirror home position sensor (MHPS) turns off is used as the reference, and the timing of turning off the blank lamp is changed.<br>A change in this set value by "1" causes a change in the void area by about 0.5mm.<br>The set value of this command is related bi-directionally with the TC50-2 and TC50-3 set values. When this set value is changed, the TC50-2 and TC50-3 set values are also changed accordingly. | |
| | | | 2 | Purpose/ function | Used to adjust the copy image position and the void area (image loss) on the copy paper.<br>This test command performs the same operation as TC50-1 more simply. When the TC50-1 set value cannot be estimated at all, use this command to perform rough adjustment, then perform a correct adjustment with TC50-1. | |
| | | | | Operation/ procedure | This adjustment is performed by changing the set values of A, B, C, and D.<br>When the key operation of this command is performed, the currently set value is displayed on the COPIES MADE display<br>There are four kinds of adjustments, which can be selected with the keys. Each mode is displayed on the COPIES SELECTED displayed with numeral figures and alphabets (A – D).<br>Enter the adjustment value with the numeric keys and press the print button, then a copy will be made and the entered value will be set.<br>  <br><br>(Setting procedure)<br>1) Set 50A and 50B to "0."<br>2) Make a copy at 200% and at 100%.<br>3) Measure the distance from the lead edge of 200% copy paper to the image lead edge, and set the measure value as the set value of 50A.<br>(Example) When the measured value is 35.5mm, set the value to 355.<br>3) Measure the distance from the lead edge of 100% copy paper to the image lead edge, and set the measured value as the set value of 50B. | |

| Purpose | Section | Main code | Sub code | | Description | Ref. page |
|---|---|---|---|---|---|---|
| Adjustment | Optical | 50 | 2 | | Used to calculate the set values of TC50-1 50A and 50B automatically. The values of 50C and 50D are the same as TC50-1 50C and 50D. The set value of this command is related bi-directionally with the TC50-1 and TC50-3 set values. When this set value is changed, the TC50-1 and TC50-3 set values are also changed accordingly. | |
| | | | 3 | Purpose/ function | Used to adjust the copy image position and the void area (image loss) on the copy paper. It is the same as TC50-1, but without copying. | |
| | | | | Operation/ procedure | This is the same as TC50-1, but without copying. The set value of this command is related bi-directionally with the TC50-1 and TC50-2 set values. When this set value is changed, the TC50-1 and TC50-2 set values are also changed accordingly. | |
| | | | 4 | Purpose/ function | Used to adjust the void area on the copy paper. It is the same as TC50-1 50D, but without copying. | |
| | | | | Operation/ procedure | This is the same as TC50-1 50D, but without copying The set value of this command is related bi-directionally with the TC50-1 50D and TC50-2 50D set values. When this set value is changed, the TC50-1 50D and TC50-2 50D set values are also changed accordingly. | |
| | Process | 8 | | | SIMULATION NO.8<br>INPUT 1-7<br>1. DEVELOPING BIAS VOLTAGE TEST.<br>2. MAIN HIGH VOLTAGE UNIT TEST.<br>3. MAIN HIGH VOLTAGE UNIT TEST. (PHOTO MODE)<br>4. MAIN HIGH VOLTAGE UNIT TEST. (TONER SAVE MODE)<br>5. PRE-TRANSFER HIGH VOLTAGE UNIT TEST.<br>6. TRANSFER HIGH VOLTAGE UNIT TEST.<br>7. SEPARATION HIGH VOLTAGE UNIT TEST. | |
| | | | 2 | Purpose/ function | Used to Used to check and adjust the main charger grid voltage and its control circuit in the manual copy mode and the auto copy mode. | |
| | | | | Operation/ procedure | When the key operation of this command is performed, the currently set value is displayed on the COPIES MADE display, and the main charger voltage is outputted for 30 sec. The adjustment value is valid in the range of 137 – 510. If a value outside the range is entered, the output voltage will not be changed. The voltage can be adjusted in the rough range of –270V to –970V. A change in the set value by "1" causes a change in the output voltage by about 1.9V. Adjustment voltage = –750 ±5V | |
| | | | 3 | Purpose/ function | Used to check and adjust the main charger rid voltage and its control circuit in the photo copy mode. | |
| | | | | Operation/ procedure | When the key operation of this command is performed, the currently set value is displayed on the COPIES MADE display, and the main charger voltage is outputted for 30 sec. The adjustment value is valid in the range of 137 – 510. If a value outside the range is entered, the output voltage will not be changed. The voltage can be adjusted in the rough range of –270V to –970V. A change in the set value by "1" causes a change in the output voltage by about 1.9V. Adjustment voltage = –590 ±5V (J) –490 ± 5V (Ex) | |
| | | | 4 | Purpose/ function | Used to Used to check and adjust the main charger grid voltage and its control circuit in the toner save copy mode. | |
| | | | | Operation/ procedure | When the key operation of this command is performed, the currently set value is displayed on the COPIES MADE display, and the main charger voltage is outputted for 30 sec. The adjustment value is valid in the range of 137 – 510. If a value outside the range is entered, the output voltage will not be changed. The voltage can be adjusted in the rough range of –270V to –970V. A change in the set value by "1" causes a change in the output voltage by about 1.9V. Adjustment voltage = –750 ±5V (J) –645 ±5V (Ex) | |
| | | | 5 | Purpose/ function | Used to check and adjust the discharge charger current and its control circuit | |
| | | | | Operation/ procedure | The discharge charger voltage is outputted for 30 sec. The adjustment is performed by rotating the PTC adjustment VR on the high voltage unit PWB. Adjustment voltage = 15 ±3μA | |
| | | | 6 | Purpose/ function | Used to check and adjust the transfer charger current and its control circuit. | |

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Adjustment | Process | 8 | 6 | Operation/ procedure | When the key operation of this command is performed, the currently set value is displayed on the COPIES MADE display, and the transfer charger is turned and kept on for 30 sec.<br>The adjustment value is valid in the range of 3 to 56. If a value outside the range is entered, the output current will not be changed. The adjustment can be performed in the range of –2.6μA to –700μA. A change in the set value by "1" causes a change in the output current by about 13.5μA.<br>Adjustment current = –55 ±5μA | |
| | | | 7 | Purpose/ function | Used to check and adjust the separation charger voltage and its control circuit. | |
| | | | | Operation/ procedure | When the key operation of this command is performed, the currently set value is displayed on the COPIES MADE display, and the transfer charger output is delivered for 30 sec.<br>The adjustment value is valid in the range of 18 to 56. If a value outside the range is entered, the output current will not be changed. The adjustment can be performed in the range of about 100V to 700V. A change in the set value by "1" causes a change in the output current by about 16V.<br>Adjustment current = 320 ±20V | |
| | | 44 | | | SIMULATION NO.44<br>INPUT 1-9<br>1. DISABLE/ENABLE PROCESS-CONTROL SETUP.<br>2. DMS POWER SETUP.<br>3. IDS POWER SETUP.<br>4. PROCESS CONTROL DATA BASE ENTRY.<br>5. (NO PROGRAM)<br>6. (NO PROGRAM)<br>7. DMS/IDS SENSOR LEVEL CHECK.<br>8. (NO PROGRAM)<br>9. PROCESS CONTROL DATA DISPLAY. | |
| | | | 2 | Purpose/ function | Used to adjust the sensitivity of the photoconductor drum marking sensor. | |
| | | | | Operation/ procedure | When this test command is executed, the photoconductor drum is rotated and the sensor output level is displayed on the COPIES MADE display. Turn VR2 in the process control PWB to adjust the value to 123 ~ 233. | |
| | | | 3 | Purpose/ function | Used to adjust the sensitivity of the image density sensor. | |
| | | | | Operation/ procedure | When this test command is executed, the photoconductor drum is rotated and the sensor output level is displayed on the COPIES MADE display. Turn VR1 in the process control PWB to adjust the value to 668 ~ 998. | |
| | Developer | 8 | | | SIMULATION NO.8<br>INPUT 1-7<br>1. DEVELOPING BIAS VOLTAGE TEST.<br>2. MAIN HIGH VOLTAGE UNIT TEST.<br>3. MAIN HIGH VOLTAGE UNIT TEST. (PHOTO MODE)<br>4. MAIN HIGH VOLTAGE UNIT TEST. (TONER SAVE MODE)<br>5. PRE-TRANSFER HIGH VOLTAGE UNIT TEST.<br>6. TRANSFER HIGH VOLTAGE UNIT TEST.<br>7. SEPARATION HIGH VOLTAGE UNIT TEST. | |
| | | | 1 | Purpose/ function | Used to check and adjust the developing bias voltage and its control circuit. | |
| | | | | Operation/ procedure | When the key operation of this command is performed, the currently set value is displayed on the COPIES MADE display, and the developing bias voltage is outputted for 30 sec.<br>The adjustment value is valid in the range of 3 to 56. If a value outside the range is entered, the output current will not be changed. The adjustment can be performed in the range of –51.1V to –350V. A change in the set value by "1" causes a change in the output current by about 6V<br>Adjustment current = 200 ±5V | |

| Purpose | Section | Main code | Sub code | | Description | Ref. page |
|---|---|---|---|---|---|---|
| Adjustment | Developer | 25 | | | SIMULATION NO.25<br>INPUT 1-2<br>1. TONER DENSITY SENSOR MONITOR.<br>2. AUTOMATIC TONER CONCENTRATION ADJUSTMENT/DV STIR. | |
| | | | 2 | Purpose/ function | Used for initial setting of toner density when replacing the developer. (Automatic adjustment of toner density) | |
| | | | | Operation/ procedure | The main motor rotates to stir the developer unit. Toner density is sampled 16 times during 8 sec after 3 minutes from the start of stirring, and the average value is stored in the RAM as the reference value of toner density.<br>Toner density is controlled with the reference value as the threshold level. The value can be checked with simulation 80-2.<br>(Note) This simulation must be performed only when the developer is replaced.<br>If this simulation is performed in the other case, an overtoner or undertoner state may occur to adversely affect the copy quality. | |
| | RDH | 53 | | | SIMULATION NO.53<br>ORIGINAL STOP POSITION SETUP. (1-3)<br>1. SDF MODE (USING SWITCH BACK)<br>2. SDF MODE (NO SWITCH BACK)<br>3. RDH MODE | |
| | | | 1 | Purpose/ function | Used to adjust the original stop position (the original switchback amount) in the SDF normal paper mode. | |
| | | | | Operation/ procedure | When the key operation of this command is performed, the currently set value is displayed on the COPIES MADE display<br>Enter the adjustment value with the numeric keys and press the print button, then the entered value will be set.<br>The adjustment value can be selected in the range of 0 ~ 31, with 16 at the center. the greater the set value is, the smaller the switchback amount is, and the original may not be aligned with the original reference plate.<br>After UPD2 detects the original rear edge, the RDH transport motor rotation is detected with the rotation sensor to control transport amount and switchback amount. A change in the set value by "1" causes a change in the switchback amount (the stop position) by about 0.425mm.<br>  <br> | |
| | | | 2 | Purpose/ function | Used to adjust the original stop position in the SDF thin paper mode (non-switchback). | |
| | | | | Operation/ procedure | When the key operation of this command is performed, the currently set value is displayed on the COPIES MADE display<br>Enter the adjustment value with the numeric keys and press the print button, then the entered value will be set.<br>The adjustment value can be selected in the range of 0 ~ 31, with 16 at the center. the greater the set value is, the smaller the switchback amount is, and the original may not be aligned with the original reference plate.<br>After UPD2 detects the original rear edge, the RDH transport motor rotation is detected with the rotation sensor to control transport amount and switchback amount. A change in the set value by "1" causes a change in the switchback amount (the stop position) by about 0.425mm.<br>  <br> | |
| | | | 3 | Purpose/ function | Used to adjust the original stop position (switchback amount) in the RDH mode. | |
| | | | | Operation/ procedure | The same as TC53-1. | |

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Adjustment | Duplex | 52 | | SIMULATION NO.52<br>INPUT 1-2<br>1. DUPLEX WIDTH GUIDE ADJUSTMENT.<br>2. DUPLEX BACK STOP GUIDE ADJUSTMENT. | | |
| | | | 1 | Purpose/ function | Used to adjust the stop position of width alignment plate of the duplex unit paper tray.<br>The home position of the width alignment plate is changed by the software. | |
| | | | | Operation/ procedure | When the key operation of this command is performed, the currently set value is displayed on the COPIES MADE display.<br>Enter the adjustment value with the numeric keys and press the print button, then the entered value will be set and the alignment plate will stop at the adjustment position.<br>The set value can be selected in the range of 0 –99. the standard set value is "50." The greater the set value is, the wider the alignment plate width is.<br>A change in the set value by "1" causes a change in the timing by about 0.57mm.<br>For the inch series, set letter paper. For the metric series, set A4 paper.<br>Check that the clearance between the paper and the alignment plate is 0.5mm to 1.0mm. | |
| | | | 2 | Purpose/ function | Used to adjust the stop position of length alignment plate (transport direction) of the duplex unit paper tray.<br>The home position of the width alignment plate is changed by the software. | |
| | | | | Operation/ procedure | When the key operation of this command is performed, the currently set value is displayed on the COPIES MADE display.<br>Enter the adjustment value with the numeric keys and press the print button, then the entered value will be set and the alignment plate will stop at the adjustment position.<br>The set value can be selected in the range of 0 –99. the standard set value is "50." The greater the set value is, the wider the alignment plate width is.<br>A change in the set value by "1" causes a change in the timing by about 0.57mm.<br>For the inch series, set letter paper. For the metric series, set A4 paper.<br>Check that the clearance between the paper and the alignment plate is 0.5mm to 1.0mm. | |
| | Finisher | 54 | | SIMULATION NO.54<br>Finisher EACH DATA ADJUSTMENT. (1~2)<br>1. GATE HOME POSITION.<br>2. PUSHER PUSHING QUANTITY. | | |
| | | | 1 | Purpose/ function | Used to adjust the stacking ability of the finisher.<br>The adjustment is performed by changing the tilt angle of the tray. The stacking ability is determined by the combination of this set value and the TC54-2 set value (the paper kicker position). Adjust for well balanced setting. | |
| | | | | Operation/ procedure | When the key operation of this command is performed, the currently set value is displayed on the COPIES MADE display<br>Enter the adjustment value with the numeric keys and press the print button, then the entered value will be set.<br>The adjustment value can be set in the range of 0 – 99. the standard set value is "50." The greater the set value is, the greater the tilt angle of the tray is.<br>If the stacking ability of copy paper is poor, set a greater value to make the tray tilt angle greater.<br>If, however, an extreme setting is made, a misfeed may occur. for curled papers, the tilt angle may be set smaller. It depends on paper quality.<br>the above adjustment is performed by changing the home position of the finisher tray with the software. | |
| | | | 2 | Purpose/ function | Used to adjust the stacking ability of the finisher.<br>The adjustment is performed by changing the paper kicker position relative to the copy paper on the tray.<br>The stacking ability is determined by the combination of this set value and the TC54-1 set value (the finisher tray tilt angle) Adjust for well balanced setting. | |

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Adjustment | Finisher | 54 | 2 | Operation/ procedure | When the key operation of this command is performed, the currently set value is displayed on the COPIES MADE display<br>Enter the adjustment value with the numeric keys and press the print button, then the entered value will be set.<br>The adjustment value can be set in the range of 0 –99. The standard set value is "20." The greater the set value is, the closer the paper kicker position is to the copy paper on the tray.<br>When the stacking ability of copy paper is poor, set a smaller value to make the paper kicker position closer to the copy paper on the tray. Then the copy paper may be restricted by the paper kicker to improve the stacking ability.<br>If, however, an extreme setting is performed, the clearance of the paper kicker becomes too smaller to cause a misfeed.<br>It depends on the paper quality.<br>The above adjustment is performed by changing the home position of the paper kicker with the software. | |

**Setting**

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Setting | Paper feed | 26 | | | SIMULATION NO.26<br>INPUT 1-8<br>1. OPTION SETUP.<br>2. TRAY1 SIZE SETUP.<br>3. AUDITOR SELECTION.<br>4. (NO PROGRAM)<br>5. COUNTER MODE SETUP.<br>6. DESTINATION SETUP.<br>7. DRUM SENSITIVITY SETUP.<br>8. TRAY EMPTY DATA SETUP. | |
| | | | 2 | Purpose/ function | Used to set the paper size for paper tray 1.<br>When the paper size for paper tray 1 is changed, the software paper size must be also changed with the test command. | |
| | | | | Operation/ procedure | Select the code number corresponding to the desired paper size with the numeric keys, and press the print button.<br>SIMULATION NO.26-2<br>1. 8.5*11<br>2. A4<br>3. B5<br>SELECT NUMBER FOR TRAY 1<br>PAPER SIZE.<br>(Note) If the paper size for paper tray 1 does not coincide with the software paper size, the auto magnification ratio copying and the auto paper select feature do not function normally. | |
| | Process | 26 | 7 | Purpose/ function | Used to set the sensitivity of the photoconductor drum.<br>When the photoconductor drum is replaced, the sensitivity must be adjusted with this test command. | |
| | | | | Operation/ procedure | Enter the code number corresponding to the set sensitivity and press the copy button, then the entered code will be displayed on the COPIES MADE display.<br>SIMULATION NO.26-7<br>DRUM SENSITIVITY SETUP<br>INPUT 1~3<br>The sensitivity level is displayed on the label attached to the inside of the photoconductor drum. The highest digit of the number shows the sensitivity level. Use this value for setting.<br>Sensitivity level "1" is the lowest sensitivity, and sensitivity level "3" is the highest.<br>For sensitivity level "1" which is the lowest, set the sensitivity level to "1." As a result, the copy lamp voltage becomes 1V (2V) higher than the standard level in all copy modes. That is, the lower sensitivity is corrected. If the sensitivity is higher, the reverse operation is performed. (2V): 200V system | |

| Purpose | Section | Main code | Sub code | | Description | Ref. page |
|---|---|---|---|---|---|---|
| Setting | Process | 44 | | | SIMULATION NO.44<br>INPUT 1-9<br>1. DISABLE/ENABLE PROCESS-CONTROL SETUP.<br>2. DMS POWER SETUP.<br>3. IDS POWER SETUP.<br>4. PROCESS CONTROL DATA BASE ENTRY.<br>5. (NO PROGRAM)<br>6. (NO PROGRAM)<br>7. DMS/IDS SENSOR LEVEL CHECK.<br>8. (NO PROGRAM)<br>9. PROCESS CONTROL DATA DISPLAY. | |
| | | | 1 | Purpose/ function | Used to set YES or NO of the main corona grid voltage correction, the optical unit correction, and the photoconductor drum correction. | |
| | | | | Operation/ procedure | When the key operation of this command is performed, the code number of the currently set operation mode is displayed on the COPIES MADE display.<br>Enter the code corresponding to each correction mode with the numeric keys and press the print button.<br>To set two or more functions, enter the total of the function codes.<br>(Example) To set all the functions, enter "7."<br>Main corona grid voltage correction ... .1 (0)<br>Optical unit correction ..... 2<br>Photoconductor drum correction ..... 4<br>(Note) The main corona grid voltage correction cannot be inhibited. Even when "0" is entered, this correction still works. | |
| | | | 4 | Purpose/ function | Used to set the image density level in the main corona grid voltage correction.<br>Always set this value to "75." | |
| | | | | Operation/ procedure | The reference density level is displayed on the COPIES MADE display.<br>In the main corona grid voltage correction, the photo copy mode main corona grid voltage is determined so that the density level becomes the reference density level.<br>$\text{Reference density level ("75")} = \frac{\text{Image patch density (Image density sensor output level)}}{\text{Photoconductor drum base surface density (Image density sensor output level)}} \times 1024$<br>(Note) This value must be set to "75." If this value is set improperly, the copy density may be abnormal. | |
| | Fuser | 43 | | | SIMULATION NO.43<br>INPUT 1-5<br>1. 190°C 2. 195°C 3. 200°C<br>4. 205°C 5. 210°C | |
| | | | 5 | Purpose/ function | Used to set the fusing temperature. | |

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Setting | Fuser | 43 | 5 | Operation/ procedure | When the key operation of this command is performed, the currently set temperature code is displayed on the COPIES MADE display.<br>Enter the code corresponding to the desired temperature with the numeric keys and press the copy button.<br>Set to 200°C. | |
| | Auditor | 26 | | | SIMULATION NO.26<br>INPUT 1-8<br>1. OPTION SETUP.<br>2. TRAY1 SIZE SETUP.<br>3. AUDITOR SELECTION.<br>4. (NO PROGRAM)<br>5. COUNTER MODE SETUP.<br>6. DESTINATION SETUP.<br>7. DRUM SENSITIVITY SETUP.<br>8. TRAY EMPTY DATA SETUP. | |
| | | | 3 | Purpose/ function | Used to set the auditor specification mode according to the use conditions of the auditor. | |
| | | | | Operation/ procedure | Enter the code number corresponding to the installation state of the auditor with the numeric keys and press the print button.<br>If setting is improper, a trouble code is displayed.<br><br>01. P10(500) 02. P10(3100)<br>03. SF-EA11 04. OTHER<br><br>1. Built-in auditor mode (500 departments)<br>2. Built-in auditor mode (500 departments) + Extra RAM mode (2600 departments)<br>3. Card counter mode (SF-EA11)<br>4. Others<br>When mode "2" is selected, selection must be made to initialize the RAM or not. If an extra RAM is newly installed, select YES and press the print button.<br>When YES is selected, the extra RAM is cleared.<br><br>DO YOU NEED THE EXTRA MEMORY INITIAL<br>1. YES 2. NO | |
| | I/F | 27 | | | SIMULATION NO.27<br>INPUT 1-5<br>1. DISABLING OF U7-00 TROUBLE.<br>2. PC/MODEM DATA CHANGE. : TEL #<br>3. PC/MODEM DATA CHANGE. : ID #<br>4. SERVICE START/END REPORT.<br>5. TAG NUMBER SETTING. | |
| | | | 1 | Purpose/ function | Used to select copy inhibition with display of self diag (U7-00) or not when a communication trouble occurs between the host computer and the MODEM. | |
| | | | | Operation/ procedure | Enter the code number corresponding to the operation mode and press the copy button, then the operation mode will be set.<br>When "1" (NO) is set, self diag (U7-00) is displayed in case of a communication trouble and copying is inhibited.<br>When "0" (YES) is selected, self diag (U7-00) is not displayed in case of a communication trouble, and copying is allowed,<br>In either case, if a communication trouble occurs, the data are invalid. | |

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Setting | I/F | 27 | 1 | | SIMULATION NO.27-1<br>DISABLING OF U7-00 TROUBLE.<br>0. YES 1. NO | |
| | | | 2 | Purpose/ function | Used to set and change the number of the host computer and MODEM. This setting is required when a communication is performed between the copy machine and the computer through the MODEM. | |
| | | | | Operation/ procedure | First, the copy machine must be connected with the host computer through the MODEM line.<br>The first screen shows the four kinds of the host computers.<br>Select the host computer code to be set or changed and press the copy button.<br>SIMULATION NO.27-2<br>SELECT HOST NUMBER TO CHANGE DATA.<br>1. HOST_1 2. HOST_2 3. HOST_3 4. HOST_4<br>The next screen shows the four kinds of MODEM.<br>Select the MODEM code to be set or changed and press the copy button.<br>The currently set numbers of the host computer and the MODEM are displayed.<br>SIMULATION NO.27-2 [HOST_1]<br>SELECT TEL# TO CHANGE DATA.<br>1. TEL#1 2. TEL#2 3. TEL#3 4. TEL#4<br>To set initially or change the setting, select "1" (YES) and press the copy button. The screen for entering appears. Enter the MODEM number with the numeric keys and press the copy button.<br>The max. 24 digits can be entered.<br>SIMULATION NO.27-2<br>HOST_1 TEL#1 : ******(1)******<br>--- CHANGE DATA : 1. YES 2. NO<br>SIMULATION NO.27-2<br>HOST_1 TEL#1 : * : [*] ; # ; [→] ; , ; [P]<br>NEW DATA : *******(2)*****<br>The set MODEM number is displayed for confirmation.<br>SIMULATION NO.27-2<br>HOST*TEL#1 : *******(2)*****<br>Data communication is allowed with max. four host computers. each of which is able to have max. four MODEM lines. The data are stored in the memory of the MODEM in the copier side.<br>(Note) A computer whose code umber is not registered by this test command cannot make access. | |
| | | | 3 | Purpose/ function | Used to set or change the ID numbers of the copy machine, the host computer, and MODEM.<br>This setting is required when a communication is performed between the copy machine and a computer through a MODEM. | |

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Setting | I/F | 27 | 1 | Operation/ procedure | First, the copier must be connected with the host computer through the MODEM line.<br>The first screen is for selection of the copy machine ID number or the host computer ID number.<br>Select the code to be set or changed with the numeric key, and press the copy button.<br><br>SIMULATION NO.27-3<br>SELECT NUMBER TO CHANGE DATA.<br>1. PPC ID# 2. PC/MODEM ID#<br><br>The currently set ID number is displayed.<br><br>SIMULATION NO.27-3<br>PPC ID# : X : [*] , Y : [→] .... 1<br>*****(2)*****→----(3)----<br><br>SIMULATION NO.27-3<br>PPC ID# : X : [*] , Y : [→] .... 2<br><br>(Note) "*****(2)*****": The currently set number.<br>The screen for input appears. Enter the ID number with the numeric key and press the copy button.<br>The max. 10 digits can be entered.<br><br>SIMULATION NO.27-3<br>PPC ID# : ----(3)----<br><br>Set the ID numbers of the host computer and the MODEM similarly.<br>To use the protect function with the ID number, another program is required. The data are stored in the memory of the MODEM in the copier side.<br>(Note) A computer whose code number is not registered cannot make communication. | |
| | | | 4 | Purpose/ function | Used to enter the start time and the end time of servicing for service time control.<br>The data can be checked with the host computer. | |
| | | | | Operation/ procedure | Select the service start time or the service end time with the numeric key, and press the copy button. Then the time will be recorded in the memory in the MODEM in the copier side.<br><br>SIMULATION NO.27-4<br>1. SERVICE START.<br>2. SERVICE END.<br><br>When the host computer receives the data normally, the following message is given.<br>When "1" is selected, the following message is displayed and the copier sends the "Service start" command to the PC/MODEM.<br><br>SIMULATION NO.27-4<br>SERVICE START.<br><br>When the PC/MODEM receives the command normally, the following message is displayed.<br><br>SIMULATION NO.27-4<br>SERVICE START.<br>Complete... | |

| Purpose | Section | Main code | Sub code | | Description | Ref. page |
|---|---|---|---|---|---|---|
| Setting | I/F | 27 | 4 | | (Service end)<br>When "2" is selected, the following message is displayed and the copier sends the service end command to the PC/MODEM.<br>SIMULATION NO.27-4<br>SERVICE END.<br>When the PC/MODEM receives the command normally, the following message is displayed.<br>SIMULATION NO.27-4<br>SERVICE END.<br>Complete... | |
| | | | 5 | Purpose/ function | Used to enter the machine version.<br>This test command allows the host computer to check the machine version. | |
| | | | | Operation/ procedure | The screen for input appears. Select the version number with the numeric keys, and press the copy button.<br>The max. eight digits can be entered.<br>SIMULATION NO.27-5<br>PRESENT TAG# : ********<br>NEW TAG# :<br>Entering the ROM version and the machine series number will help servicing.<br>The data are stored in the copier memory.<br>SIMULATION NO.27-5<br>TAG# : ******** | |

**Operation test**

| Purpose | Section | Main code | Sub code | | escription | Ref. page |
|---|---|---|---|---|---|---|
| Operation test | Operation panel | 5 | | | SIMULATION NO.5<br>INPUT 1-4<br>1. ALL LED/LCD ON.<br>2. HEATER LAMP TEST.<br>3. COPY LAMP TEST.<br>4. DL/BL TEST. | |
| | | | 1 | Purpose/ function | Used to check the operation of the operation panel lamps, LCD, and their control circuit. | |
| | | | | Operation/ procedure | All lamps and LCDs on the operation panel light up for 60 sec. | |
| | Paper feed | 6 | | | SIMULATION NO.6<br>INPUT 1-4<br>1. COPIER SOLENOID/CLUTCH OPERATION.<br>2. BLOWER MOTOR OPERATION TEST.<br>3. PAPER TRAY OPERATION TEST.<br>4. (NO PROGRAM) | |
| | | | 3 | Purpose/ function | Used to check the operation of the paper tray and the sensors and detectors in the paper tray and their control circuit. | |
| | | | | Operation/ procedure | Each tray performs initial operation.<br>Each tray falls to the lower limit then rises. If there any some paper in the tray, when the paper is detected, the tray stops. If there are no paper in the tray, the tray rises to the upper limit and stops when the upper limit is detected.<br>In this case, the ON/OFF state can be monitored with the LCD display. | |

| Purpose | Section | Main code | Sub code | escription | Ref. page |
|---|---|---|---|---|---|
| Operation test | Paper feed | 6 | 3 | When the machine goes into the active state, the display (black-and-white) is reversed. | |

| SIMULATION NO.6-3 | |
|---|---|
| MFT | : MPED , MPSD , MPSD2 |
| TRAY1 | : TCD1 , TLD1 , TUD1 , TLMD1 , TPTD1 TSW1 |
| TRAY2 | : TCD2 , TLD2 , TUD2 , TLMD2 , TPT2 TSW2 , PS21 , PS22 , PS23 , PS24 PS25 , PS26 |
| TRAY3 | : TCD3 , TLD3 , TUD3 , TLMD3 , TPTD3 TSW3 , PS31 , PS32 , PS33 , PS34 PS35 , PS36 |

<Tray 1>
TCD1 : Paper feed tray 1 set detection
TLD1 : Paper feed tray lower limit sensor 1
TUD1 : Paper feed tray rising sensor 1
TLMD1: Paper feed tray upper limit sensor 1
TPTD1: Paper feed tray PT sensor 1
TSW1 : Paper feed tray switch 1

<TRAY 2>
TCD2 : Paper feed tray 2 set detection
TLD2 : Paper feed tray lower limit sensor 2
TUD2 : Paper feed tray rising sensor 2
TLMD2: Paper feed tray upper limit sensor 2
TPTD2: Paper feed tray PT sensor 2
TSW2 : Paper feed tray switch 2

<TRAY 3>
TCD3 : Paper feed tray 3 set detection
TLD3 : Paper feed tray lower limit sensor 3
TUD3 : Paper feed tray rising sensor 3
TLMD3: Paper feed tray upper limit sensor 3
TPTD3: Paper feed tray PT sensor 3
TSW3 : Paper feed tray switch 3

PS21: Paper feed tray paper size sensor 21 (Refer to the table below.)
PS22: Paper feed tray paper size sensor 22 (Refer to the table below.)
PS23: Paper feed tray paper size sensor 23 (Refer to the table below.)
PS24: Paper feed tray paper size sensor 24 (Refer to the table below.)
PS25: Paper feed tray paper size sensor 25 (Refer to the table below.)
PS26: Paper feed tray paper size sensor 26 (Refer to the table below.)
PS31: Paper feed tray paper size sensor 31 (Refer to the table below.)
PS32: Paper feed tray paper size sensor 32 (Refer to the table below.)
PS33: Paper feed tray paper size sensor 33 (Refer to the table below.)
PS34: Paper feed tray paper size sensor 34 (Refer to the table below.)
PS35: Paper feed tray paper size sensor 35 (Refer to the table below.)
PS36: Paper feed tray paper size sensor 36 (Refer to the table below.)

| | Paper width detection | | | | | Paper length detection |
|---|---|---|---|---|---|---|
| | PS1 | PS2 | PS3 | PS4 | PS5 | PS6 |
| A4 | — | — | OFF | — | — | OFF |
| A3 | — | — | OFF | — | — | — |
| B5 | — | OFF | — | — | — | OFF |
| B4 | — | OFF | — | — | — | — |
| A4R | OFF | — | — | — | — | OFF |
| B5R | — | — | — | OFF | — | OFF |
| 11 × 8 1/2 | — | — | — | — | OFF | OFF |
| 11 × 17 | — | — | — | — | OFF | — |
| 8 1/2 × 11 | OFF | — | — | — | — | OFF |
| 8 1/2 × 13 | OFF | — | — | — | — | — |
| 8 1/2 × 14 | OFF | — | — | — | — | — |

OFF: The sensor is interrupted.
— : The sensor is ON.

| | | | | | |
|---|---|---|---|---|---|
| | 30 | 1 | SIMULATION NO.30<br>INPUT 1-2<br>1. MAIN FRAME SENSOR TEST.<br>2. TRAY SENSOR TEST. | | |
| | | | Purpose/ function | Used to check the operation of the sensors and detectors in the other sections than the paper feed section of the main body and their control circuit.<br>The operations of the paper feed sensors and detectors can be monitored with the LCD display. | |
| | | | Operation/ procedure | The ON/OFF state of the sensors and detectors in the other sections than the paper feed section of the main body can be monitored with the LCD display.<br>When the machine goes into the active state, the display (black-and-white) is reversed. | |

| Purpose | Section | Main code | Sub code | escription | | Ref. page |
|---|---|---|---|---|---|---|
| Adjustment | Paper feed | 30 | | | SIMULATION NO.30-1<br>PFD1 , PFD2 , PFD3 , DPFD , MPFD<br>PPD1 , PPD2 , PPD3 , PSD , POD<br>DPID , DPPD , DTPD , DTWHP , DTBHP<br>FUSUS , TBBOX , TNF , TNCTR , TES<br>DSW , DDSW , DSBD , MDOP , | |
| | | | 2 | Purpose/ function | Used to check the operation of the sensors and detectors in the paper feed section and their control circuit.<br>the operations of the sensors and detectors in the paper feed section can be monitored with the LCD display. | |
| | | | | Operation/ procedure | The ON/OFF state of the sensors and detectors in the paper feed section can be monitored with the LCD display.<br>When the machine goes into the active state, the display (black-and-white) is reversed. | |

SIMULATION NO.30-2

| | |
|---|---|
| MFT | : MPED, MPSD1 , MPSD2 |
| TRAY1 | : TCD1 , TLD1 , TUD1 , TLMD1 , TPTD1<br>TSW1 |
| TRAY2 | : TCD2 , TLD2 , TUD2 , TLMD2 , TPTD2<br>TSW2, PS21 , PS22 , PS23 , PS24<br>PS25 , PS26 |
| TRAY3 | : TCD3 , TLD3 , TUD3 , TLMD3 , TPTD3<br>TSW3, PS31 , PS32 , PS33 , PS34<br>PS35 , PS36 |

<Tray 1>
TCD1 : Paper feed tray 1 set detection
TLD1 : Paper feed tray lower limit sensor 1
TUD1 : Paper feed tray rising sensor 1
TLMD1 : Paper feed tray upper limit sensor 1
TPTD1 : Paper feed tray PT sensor 1
TSW1 : Paper feed tray switch 1

<TRAY 2>
TCD2 : Paper feed tray 2 set detection
TLD2 : Paper feed tray lower limit sensor 2
TUD2 : Paper feed tray rising sensor 2
TLMD2 : Paper feed tray upper limit sensor 2
TPTD2 : Paper feed tray PT sensor 2
TSW2 : Paper feed tray switch 2

<TRAY 3>
TCD3 : Paper feed tray 3 set detection
TLD3 : Paper feed tray lower limit sensor 3
TUD3 : Paper feed tray rising sensor 3
TLMD3 : Paper feed tray upper limit sensor 3
TPTD3 : Paper feed tray PT sensor 3
TSW3 : Paper feed tray switch 3

PS21 : Paper feed tray paper size sensor 21 (Refer to the table below.)
PS22 : Paper feed tray paper size sensor 22 (Refer to the table below.)
PS23 : Paper feed tray paper size sensor 23 (Refer to the table below.)
PS24 : Paper feed tray paper size sensor 24 (Refer to the table below.)
PS25 : Paper feed tray paper size sensor 25 (Refer to the table below.)
PS26 : Paper feed tray paper size sensor 26 (Refer to the table below.)
PS31 : Paper feed tray paper size sensor 31 (Refer to the table below.)
PS32 : Paper feed tray paper size sensor 32 (Refer to the table below.)
PS33 : Paper feed tray paper size sensor 33 (Refer to the table below.)
PS34 : Paper feed tray paper size sensor 34 (Refer to the table below.)
PS35 : Paper feed tray paper size sensor 35 (Refer to the table below.)
PS36 : Paper feed tray paper size sensor 36 (Refer to the table below.)

| | Paper width detection | | | | | Paper length detection |
|---|---|---|---|---|---|---|
| | PS1 | PS2 | PS3 | PS4 | PS5 | PS6 |
| A4 | — | — | OFF | — | — | OFF |
| A3 | — | — | OFF | — | — | — |
| B5 | — | OFF | — | — | — | OFF |
| B4 | — | OFF | — | — | — | — |
| A4R | OFF | — | — | — | — | OFF |
| B5R | — | — | — | OFF | — | OFF |
| 11 × 8 1/2 | — | — | — | — | OFF | OFF |
| 11 × 17 | — | — | — | — | OFF | — |
| 8 1/2 × 11 | OFF | — | — | — | — | OFF |
| 8 1/2 × 13 | OFF | — | — | — | — | — |
| 8 1/2 × 14 | OFF | — | — | — | — | — |

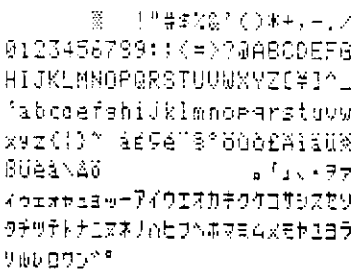
OFF: The sensor is interrupted.
—: The sensor is ON.

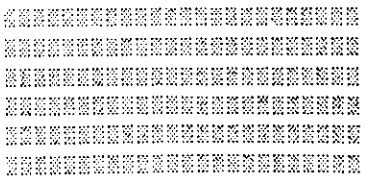
| Purpose | Section | Main code | Sub code | escription | | Ref. page |
|---|---|---|---|---|---|---|
| Operation test | Paper transport | 6 | | | SIMULATION NO.6<br>INPUT 1-4<br>1. COPIER SOLENOID/CLUTCH OPERATION.<br>2. BLOWER MOTOR OPERATION TEST.<br>3. PAPER TRAY OPERATION TEST.<br>4. (NO PROGRAM) | |
| | | | 1 | Purpose/ function | Used to check the operation of the clutches and the solenoids in the paper transport system and their control circuit. | |
| | | | | Operation/ procedure | Enter the number corresponding to the load and press the print button, and the test will be started. To stop the continuous operation, press the interruption key. Pressing the interruption key also allows switching to another load.<br>The motor is turned on as well as the clutches and the solenoids.<br>SIMULATION NO.6<br>SELECT COPIER SOLENOID/CLUTCH.<br>1. PSPS 2. DGS 3. DGSSB 4. CRS<br>5. FSOL 6. MPFS 7. MPFC 8. TBC1<br>9. TBC2 10. TBC3 11. DBC 12. TRC1<br>13. TRC2 14. DTRC 15. 16. DFSS<br>17. PSBRK | |
| | Optical | 1 | + | | SIMULATION NO.1<br>INPUT 1-4<br>1. OPTICAL SYSTEM SCAN.<br>2. OPTICAL SYSTEM SENSOR TEST.<br>3. LENS TEST.<br>4. LENS AGING TEST. | |
| | | | 1 | Purpose/ function | Used to check the operation of the scanner unit and its control circuit. | |
| | | | | Operation/ procedure | When the print button is pressed, scanning is performed at the speed corresponding to the currently set copy magnification ratio.<br>The copy magnification ratio can be set arbitrarily. | |
| | | | 2 + | Purpose/ function | Used to check the operation of the sensors and detectors in the optical unit and their control circuit. | |
| | | | | Operation/ procedure | The ON/OFF state of the sensors and detectors in the optical unit and the DC38V power state can be monitored with the LCD display.<br>When the machine goes into the active state, the display (black-and-white) is reversed.<br>SIMULATION NO.1-2<br>LHP, MBHP, RE, MHP, DC38V | |
| | | | 3 + | Purpose/ function | Used to check the operation of the lens unit and its control circuit. | |
| | | | | Operation/ procedure | The lens unit moves to positions corresponding to the copy magnification ratios and stops at each position for about 1.0 sec.<br>The lens operation state (moving or stationary) is displayed as well as the copy magnification ratio corresponding to the lens stop position on the LCD display.<br>(START)<br>AB series 100%→50%→70%→81%→86%→<br>←115%←122%←141%←200%←<br>(Moving)<br>SIMULATION NO. 1-3<br>ONE LENS CARRIAGE CYCLE<br>Moving<br>(START)<br>Inch series 100%→50%→64%→77%→95%→<br>←121%←129%←141%←200%←<br>(Moving)<br>SIMULATION NO. 1-3<br>ONE LENS CARRIAGE CYCLE<br>Stopped . . . | |

| Purpose | Section | Main code | Sub code | | Description | Ref. page |
|---|---|---|---|---|---|---|
| Operation test | Optical | 1 | 4 ÷ | Purpose/ function | Used to check the operation of the lens unit and its control circuit. | |
| | | | | Operation/ procedure | The operation of simulation 1-3 is continuously repeated.<br>{Moving} {Stationary}<br>SIMULATION NO. 1–4 SIMULATION NO. 1–4<br>LENS PRESET. LENS PRESET.<br>Moving Preset stop. . . | |
| | | 5 | | | SIMULATION NO.5<br>INPUT 1-4<br>1. ALL LED/LCD ON.<br>2. HEATER LAMP TEST.<br>3. COPY LAMP TEST.<br>4. DL/BL TEST. | |
| | | | 3 | Purpose/ function | Used to check the operation of the copy lamp and its control circuit. | |
| | | | | Operation/ procedure | The copy lamp is lighted for 20 sec in the currently set copy mode and the exposure level (copy density).<br>In this case, the copy lamp application voltage is displayed on the COPIES MADE display.<br>The one tenth (1/10) of the displayed value is the actual value of the copy lamp application voltage. For the 200V system, the two tenth (2/10) of the displayed value is the actual value of the copy lamp application voltage.<br>During this test command operation, the fuser section fan motor, the optical section fan motor, and the image forming section fan motor are turned on. | |
| | Process | 5 | | | SIMULATION NO.5<br>INPUT 1-4<br>1. ALL LED/LCD ON.<br>2. HEATER LAMP TEST.<br>3. COPY LAMP TEST.<br>4. DL/BL TEST. | |
| | | | 4 | Purpose/ function | Used to check the operation of the discharge lamp, the blank lamp, and their control circuit. | |
| | | | | Operation/ procedure | The blank lamps are lighted from the rear frame side to the front frame side in sequence, and all the lamps are lighted for 1 sec. Then the lamps are turned off from the rear frame side to the front frame side in sequence. During that time, the discharge lamp is lighted. | |
| | | 7 | | | SIMULATION NO.7<br>INPUT 1-7<br>1. COPIER AGING TEST MODE.<br>2. COPIER AGING TEST; MISFEED DETECTION DISABLED.<br>3. COPIER AGING TEST, MISFEED DETECTION, WARM UP, TEMPERATURE CONTROL DISABLED.<br>4. WARM UP DISABLE.<br>5. PROCESS UNIT OPERATION TEST.<br>6. INTERVAL AGING MODE.<br>7. INTERVAL AGING MODE. (NO MISFEED DETECTION) | |
| | | | 5 | Purpose/ function | Used to check the operation of the image forming section and its control circuit. | |
| | | | | Operation/ procedure | the photoconductor drum, the corona unit, the blank lamp, the discharge lamp, and the developer unit are turned on for 30 sec at the voltage and current shown below.<br>MC grid voltage (–578V), transfer charger current (–358μA), separation charger voltage (289V), developer bias voltage (203V) | |
| | Developer | 10 | | | TONER MOTOR OPERATION.<br>ARE YOU SURE?<br>1. YES 2. NO | |

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Operation test | Developer | 10 | | Purpose/ function | Used to check the operation of the toner motor and its control circuit.<br>(Note) Do not perform this test command when there is toner in the toner hopper. If performed, excessive toner may enter the developer section to cause an overtoner state. Be sure to remove the toner motor from the toner hopper in advance. | |
| | | | | Operation/ procedure | Select "Execution" with the numeric key and press the print button, then the toner motor will turns on for 30 sec. | |
| | | 25 | | | SIMULATION NO.25<br>INPUT 1-2<br>1. TONER DENSITY SENSOR MONITOR.<br>2. AUTOMATIC TONER CONCENTRATION ADJUSTMENT/DV STIR. | |
| | | | 1 | Purpose/ function | Used to check the operation of the sections except for the optical section and to check the operation of the toner density sensor.<br>The toner density sensor output can be monitored. | |
| | | | | Operation/ procedure | The main motor rotates to operate the units connected to the motor. The output level of the toner density sensor is displayed on the COPIES MADE display. | |
| | Fuser | 5 | | | SIMULATION NO.5<br>INPUT 1-4<br>1. ALL LED/LCD ON.<br>2. HEATER LAMP TEST.<br>3. COPY LAMP TEST.<br>4. DL/BL TEST. | |
| | | | 2 | Purpose/ function | Used to check the operation of the heater lamp and its control circuit. | |
| | | | | Operation/ procedure | The heater lamp repeats ON for 500ms and OFF for 500ms each 10 times. | |
| | RDH | 2 | | | SIMULATION NO.2<br>INPUT 1-3<br>1. RDH AGING TEST.<br>2. RDH SENSOR TEST.<br>3. RDH COMPONENT OPERATION TEST. | |
| | | | 1 | Purpose/ function | Used to check the operation of the RDH unit and its control circuit. | |
| | | | | Operation/ procedure | There are following eight operation modes, which can be selected with the numeric keys.<br>When the print button is pressed, the continuous operation of paper feed, paper transport, and paper exit is performed.<br>1 – Single face → Single face (Copy mode)<br>2 – Single face → Duplex faces (Copy mode)<br>3 – Duplex faces → Duplex faces (Copy mode)<br>4 – Duplex faces → Single face (Copy mode)<br>5 – Single face → Single face (Copy mode)<br>6 – Single face → Duplex face (Copy mode)<br>7 – Duplex faces → Duplex faces (Copy mode)<br>8 – Duplex faces → Single face (Copy mode)<br>Operations 5 ~ 8 can be performed without paper. In this case, misfeed is disregarded.<br>SIMULATION NO.2-1<br>1. 1→1 2. 1→2<br>3. 228Ä2 4. 2→1<br>(NO MISFEED DETECTION: ABOVE+4)<br>When the original guide is not set to the normal position, the RDH feed jam (OGFD) occurs. | |
| | | | 2 | Purpose/ function | Used to check the operation of the RDH unit and its control circuit. | |
| | | | | Operation/ procedure | The ON/OFF state of the sensors and detectors in the optical unit can be monitored with the LCD display.<br>When the machine goes into the active state, the display (black-and-white) is reversed. | |

| Purpose | Section | Main code | Sub code | | Description | Ref. page |
|---|---|---|---|---|---|---|
| Operation test | RDH | 2 | 2 | | SIMULATION NO.2-2<br>UPD1 , UPD2 , UPD3 , UPD4 , UPD5<br>UPD6 , UBPD , UHFD , UWSD1 , UWSD2<br>UWSD3 , URD1 , URD2 , ULSD1 , ULSD2<br>ULSD3 , ULSD4 , UPED , UPFD1 , UPFD2<br>UDSW3 , UDSW2 , UBFD , UJRSW1 , UDSW1<br>UJRSW2 | |
| | | | 3 | Purpose/ function | Used to check the operation of the loads in the RDH and their control circuit. | |
| | | | | Operation/ procedure | Enter the number corresponding to each load and press the print button, then the operation will be started. The continuous operation performed by pressing the interruption key is stopped. Pressing the interruption allows to switch to another load.<br>SIMULATION NO.2-3<br>1. UVFM ON 2. UBFM ON<br>3. UFM FORWARD 4. UFM REVERSE<br>5. UTM FORWARD 6. UTM REVERSE<br>7. UOM1 ON 8. UOM2 ON<br>9. UHGS ON 10. UVVS ON<br>11. URLS ON 12. USGS ON<br>13. URPS ON 14. DSS ON<br>15. UFCL ON 16. UBVM ON<br>17. USLS ON | |
| | Finisher | 3 | | | SIMULATION NO.3<br>INPUT 1-3<br>1. (NO PROGRAM)<br>2. FINISHER SENSOR TEST.<br>3. FINISHER COMPONENT OPERATION TEST. | |
| | | | 2 | Purpose/ function | Used to check the operation of the sensors and detectors in the finisher unit and the related circuits. | |
| | | | | Operation/ procedure | The ON/OFF state of the sensors and detectors in the finisher unit can be monitored with the LCD display.<br>When the machine goes into the active state, the display (black-and-white) is reversed.<br>SIMULATION NO.3-2<br>FPPD1 , FPOD , FSTPD , FJPD , FOTPD<br>FSS , FSND , FSHPS , FPHPS , FPOHS<br>FELS , FEHD , FOTHS , FJHS , FGHPS<br>FTGHS , FTGLS , FPFS | |
| | | | 3 | Purpose/ function | Used to check the operation of the loads in the finisher and their control circuit. | |
| | | | | Operation/ procedure | Enter the number corresponding to the load and press the print button, then the operation will be started.<br>The continuous operation performed by pressing the interruption key is stopped. Pressing the interruption allows to switch to another load.<br>(Note)<br>• Do not use this test command when there is paper on the offset tray. It may cause a trouble. | |

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Operation test | Finisher | 3 | 3 | | SIMULATION NO.3-3<br>1. FTGM 2.FTGM (CONT.)<br>3. FGM 4. FGM (CONT.)<br>5. FJM 6. FJM (CONT.)<br>7. FSM 7. FSM<br>8. FPM 9. FPM (CONT.)<br>10. FOTEM 11. FOTEM (CONT.)<br>12. FOTSM 13. FOTSM (CONT.)<br>14. FORM1 FORWARD 15. FORM1 REVERSE<br>16. FORM2 | |
| | Auditor | 28 | | | SIMULATION NO.28<br>INPUT 1-4<br>1. PRINTER CHARACTER GENERATOR PRINTOUT.<br>2. PRINTER TEST OPERATION.<br>3. KEY OPERATOR DATA PRINTOUT.<br>4. BACKUP DATA PRINTOUT. | |
| | | | 1 | Purpose/ function | Used to perform the print test of the auditor commander (EA-13) printer. | |
| | | | | Operation/ procedure | When the START/STOP key of the auditor commander (EA-13) is pressed, printing is stated.<br>The specified characters are printed. Check them for no abnormalities.<br>SIMULATION NO.28-1<br>PUSH THE START/STOP KEY ON THE COUNTER ... 1<br>COMMANDER<br>(Printing)<br>SIMULATION NO.28-1<br>—— CURRENTLY PRINTING —— ... 2<br>Print sample<br>  <br>When the START/STOP key of the auditor commander (EA-13) is pressed again, printing is stopped. | |
| | | | 2 | Purpose/ function | Used to perform the print test of the auditor commander (EA-13) printer. | |
| | | | | Operation/ procedure | When the START/STOP key of the auditor commander (EA-13) is pressed, printing is stated.<br>All dots are printed. Check them for no abnormalities.<br>SIMULATION NO.28-2<br>PUSH THE START/STOP KEY ON THE COUNTER<br>COMMANDER | |

| Purpose | Section | Main code | Sub code | | Description | Ref. page |
|---|---|---|---|---|---|---|
| Operation test | Auditor | 28 | 2 | | SIMULATION NO.28-2<br>—— CURRENTRY PRINTING ——<br>Print sample<br>  <br>When the START/STOP key of the auditor commander (EA-13) is pressed, printing is stopped. | |
| | All units | 7 | | | SIMULATION NO.7<br>INPUT 1-7<br>1. COPIER AGING TEST MODE.<br>2. COPIER AGING TEST; MISFEED DETECTION DISABLED.<br>3. COPIER AGING TEST, MISFEED DETECTION, WARM UP, TEMPERATURE CONTROL DISABLED.<br>4. WARM UP DISABLE.<br>5. PROCESS UNIT OPERATION TEST.<br>6. INTERVAL AGING MODE.<br>7. INTERVAL AGING MODE. (NO MISFEED DETECTION) | |
| | | | 1 | Purpose/ function | Used to check the warming up time and the operations of all units and the aging operation.<br>The operation of each section can be checked during copying. | |
| | | | | Operation/ procedure | When the key operation of this test command is performed, warming up is started. Warming up time is counted up every second and displayed on the LCD display.<br>When the machine goes into the ready state, counting up is stopped and the count value is kept displayed.<br>Press the clear all key once and enter the copy quantity and press the print button. Then copying will be started to make copies of the entered quantity. | |
| | | | 2 | Purpose/ function | Used to check the warming up time and the operations of all units and the aging operation.<br>The operation of each section can be checked during copying without paper. | |
| | | | | Operation/ procedure | The same as the operations of TC7-1, but without paper. If paper is used and a misfeed occurs, it will be disregarded.<br>In this case, the paper detectors must be forcibly turned off. | |
| | | | 3 | Purpose/ function | Used to check the mechanical operations of all the unit.<br>The operations of each section during copying can be checked without paper disregarding the fusing temperature. . | |
| | | | | Operation/ procedure | The same as the operations of TC7-1, but without paper and with the fusing temperature not reaching the specified level. If paper is used and a misfeed occurs or if a trouble occurs in the fuser section, it will be disregarded.<br>In this case, the paper detectors must be forcibly turned off.<br>The heater lamp does not turn on during this test. | |
| | | | 4 | Purpose/ function | Used to check the mechanical operations of all the unit.<br>The operations of each unit during copying can be checked disregarding the fusing temperature. | |
| | | | | Operation/ procedure | Warming up operation is omitted and ready state is reached. Then the same operations as simulation 7-1 are performed. If the fusing temperature is outside the specified range, the self diag will start. | |
| | | | 6 | Purpose/ function | Used to check the warming up time and the operations of all units and the intermittent aging of copy operation.<br>The operation of each section can be checked during copying. | |
| | | | | Operation/ procedure | The same operations as TC7-1 in addition to the intermittent aging. The interval can be set arbitrarily in the range of 1 ~ 900 sec. | |

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Operation test | All units | 7 | | | SIMULATION NO.7-6<br>INPUT INTERVAL TIME.<br>(1-900SEC) | |
| | | | 7 | Purpose/ function | Used to check the warming up time and the operations of all units and intermittent aging during copying.<br>The operations of each unit during copying can be checked. | |
| | | | | Operation/ procedure | The same as the operations of TC7-2 in addition to the intermittent aging.<br>The interval can be arbitrarily set in the range of 1 ~ 999 sec. | |
| | Others | 6 | 2 | | SIMULATION NO.6<br>INPUT 1-4<br>1. COPIER SOLENOID/CLUTCH OPERATION.<br>2. BLOWER MOTOR OPERATION TEST.<br>3. PAPER TRAY OPERATION TEST.<br>4. (NO PROGRAM) | |
| | | | | Purpose/ function | Used to check the operation of each blower motor and its control circuit. | |
| | | | | Operation/ procedure | Enter the number corresponding to the load and press the print button, then the operation will be started.<br>The continuous operation performed by pressing the interruption key is stopped. Pressing the interruption allows to switch to another load.<br><br>SIMULATION NO.6-2<br>1. TRAY1 (TVVS1, TBVS1, TVFM, TBFM)<br>2. TRAY2 (TVVS2, TBVS2, TVFM, TBFM)<br>3. TRAY3 (TVVS3, TBVS3, TVFM, TBFM)<br>4. DUPLEX (DVVS, DBVS, TVFM, TBFM)<br>5. FAN ONLY (TVFM, TBFM)<br>SELECT NUMBER (1-5) | |

**Confirmation**

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Confirmation | Process | 44 | | | SIMULATION NO.44<br>INPUT 1-9<br>1. DISABLE/ENABLE PROCESS-CONTROL SETUP.<br>2. DMS POWER SETUP.<br>3. IDS POWER SETUP.<br>4. PROCESS CONTROL DATA BASE ENTRY.<br>5. (NO PROGRAM)<br>6. (NO PROGRAM)<br>7. DMS/IDS SENSOR LEVEL CHECK.<br>8. (NO PROGRAM)<br>9. PROCESS CONTROL DATA DISPLAY. | |
| | | | 7 | Purpose/ function | Used to check the output level of the photoconductor drum mark sensor and the image density sensor. | |
| | | | | Operation/ procedure | The average output level is displayed on the LCD display when the photoconductor drum rotates and when the photoconductor drum mark sensor and the image density sensor measure the photoconductor drum base surface.<br>The sensor gain level at that time is the second lowest label in the seven levels. If the level is outside the range shown below, use TC44-2 and 44-3 to adjust the sensor. | |

| Purpose | Section | Main code | Sub code | | Description | Ref. page |
|---|---|---|---|---|---|---|
| Confirmation | Process | 44 | 7 | | DM (Photoconductor drum mark sensor output level) — 123 ~ 233<br>ID image density sensor output level ) — 668 ~ 998<br><br>SIMULATION NO.44-7<br>DM/ID SENSOR LEVEL CHECK.<br>DM ... ***←1<br>ID ... ***←2 | |
| | | | 9 | Purpose/ function | Used to check the data on the main corona grid voltage correction.<br>This test command allows to check that the main corona grid voltage correction is performed normally or not. | |
| | | | | Operation/ procedure | The following data are displayed on the LCD display.<br><br>SIMULATION NO.44-9<br><br>FVGNOM : *** FVGPHT : *** FVGTS : ***<br>NVGNOM : *** NVGPHT : *** NVGTS : ***<br>FCLNOM : *** FCLPHT : *** FCLTS : ***<br>NCLNOM : *** NCLPHT : *** NCLTS : ***<br>FCLAE : *** FCLAE : ***<br>DVCL : *** DSENSE : ***<br>DMCNT : *** IDCNT : *** DMRNCT: ***<br><br>FVGNOM: The MC grid voltage level in the normal copy mode set by the MC grid voltage correction performed during the first warming up after adjustment of the MC grid voltage in the normal copy mode by TC8-2.<br>A change by 1.9V causes a change in the display value by "1." The display value "396" corresponds to about –750V.<br>FVGPH: The MC grid voltage level during the first warming up after the adjustment of the MC grid voltage in the photo copy mode by TC8-3.<br>FVGTS: The MC grid voltage level in the toner save copy mode set by the MC grid voltage correction performed during the first warming up after adjustment of the MC grid voltage in the toner save copy mode by TC8-4.<br>A change by 1.9V causes a change in the display value by "1." The display value "370" corresponds to about –700V.<br>NVGNOM: The MC grid voltage level in the currently set normal copy mode.<br>A change by 1.9V causes a change in the display value by "1." The displayed value "396" corresponds to the actual voltage of about –750V.<br>NVGPHT: The MC grid voltage level in the currently set photo copy mode.<br>A change by 1.9V causes a change in the display value by "1." The displayed value "310" corresponds to the actual voltage of about –590V.<br>NVGTS: The MC grid voltage level in the currently set toner save copy mode.<br>A change by 1.9V causes a change in the display value by "1." The displayed value "370" corresponds to the actual voltage of about –700V.<br>FCLNOM: The copy lamp voltage level at the normal copy mode EXP level "1" set by the first copy density adjustment (TC46) after the adjustment of the MC grid voltage in the normal copy mode by TC8-2.<br>The value obtained by dividing the displayed value with 10 (5) is the actual value of the copy lamp voltage.<br>( ): 200V system<br>FCLPHT: The copy lamp voltage level at the photo copy mode EXP level "1" set by the first copy density adjustment (TC46) after the adjustment of the MC grid voltage in the photo copy mode by TC8-3.<br>The value obtained by dividing the displayed value with 10 (5) is the actual value of the copy lamp voltage.<br>( ): 200V system | |

| Purpose | Section | Main code | Sub code | | Description | Ref. page |
|---|---|---|---|---|---|---|
| Confirmation | Process | 44 | 9 | | FCLTS: The copy lamp voltage level at the toner save copy mode EXP level "1" set by the first copy density adjustment (TC46) after the adjustment of the MC grid voltage in the toner save copy mode by TC8-4.<br>The value obtained by dividing the displayed value with 10 (5) is the actual value of the copy lamp voltage.<br>( ): 200V system<br>NCLNOM: The copy lamp voltage level at EXP level "1" in the currently set normal copy mode.<br>NCLPHT: The copy lamp voltage level at EXP level "1" in the currently set photo copy mode.<br>NCLTS: The copy lamp voltage level at EXP level "1" in the currently set toner save copy mode.<br>FCLAE: The copy lamp voltage level in the auto copy mode (with black-and-white original) set in the first copy density adjustment after the adjustment of the MC grid voltage by T.C8.<br>The value obtained by dividing the displayed value with 10 (5) is the actual value of the copy lamp voltage.<br>( ): 200V system<br>NCLAE: The copy lamp voltage level in the currently set auto copy mode.<br>The value obtained by dividing the displayed value with 10 (5) is the actual value of the copy lamp voltage.<br>( ): 200V system<br>DVCL: The reference copy lamp voltage level for the currently set optical unit dirt correction.<br>DSENSE: The copy lamp lights up at 70V (140V) during warming up by TC46, and the light is reflected by the standard reflection plate. The AE sensor level at that time.<br>DMCNT: The photoconductor drum mark sensor gain level.<br>The gain level is automatically adjusted every time before the main corona grid voltage correction.<br>IDCNT: Image density sensor gain level.<br>The gain level is automatically adjusted every time before the main corona grid voltage correction.<br>DSENSE: The copy lamp lights up at 70V (140V) during warming up by TC46, and the light is reflected by the standard reflection plate. The AE sensor level (standard level) at that time.<br>DMRNCT: The count value of the optical section drum correction counter. | |

## Copy density adjustment

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Copy density adjustment | | 46 | | SIMULATION NO.46<br>INPUT (450~800): NORMAL MODE<br>(TONER SAVE MODE: USE [→] KEY) | | |
| | | | | Purpose/ function | Used to adjust the copy density (exposure) and the copy density gradient (exposure gradient) in each copy mode. | |
| | | | | Operation/ procedure | When this test command is executed, the currently set exposure level is displayed on the COPIES MADE display.<br>Select exposure level "1" or "5" with the copy density adjustment key. After adjustment, enter with the numeric keys. When print button is pressed, the entered value is set.<br>Use the copy mode key to select each copy mode. | |

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Copy density adjustment | | 46 | | Operation/ procedure | Selection between the toner save mode and the non-toner-save mode is performed by pressing the → key.<br>When the toner save mode is selected, "46A" is displayed in the COPIES SELECTED display.<br>Exposure level is adjusted by changing the copy lamp application voltage. Adjustment is performed at exposure level "1" and "5" in each copy mode, and the copy density (exposure) and the copy density gradient(exposure gradient) can be adjusted arbitrarily.<br>The adjustment value can be selected in the range of 450 –800. The value obtained by dividing the adjustment value with 10 (5) is virtually the actual value of the copy lamp voltage.<br>( ): 200V system | |
| | | 47 | | Purpose/ function | Used to store the characteristics of the AE sensor and the optical section for the change in the copy lamp application voltage.<br>The exposure level in he auto copy mode is automatically determined by the store data and the original density. | |
| | | | | Operation/ procedure | When the key operation of this command is performed, the scanner unit is initialized to be fed to the center of the original table.<br>Pus several white papers on the original table and close the RDH unit.<br>Press the copy button again, and the copy lamp application voltage will change from 80V (160V) to 45V (90V) in the step of 5V. In this case, the AE sensor output characteristics based on the white paper is stored in the main PWB RAM.<br>At that time, the AE sensor gain is automatically adjusted.<br>The above procedure must be performed before the copy density adjustment in the auto copy mode. | |

**Trouble**

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Cancel | Battery | 13 | | Purpose/ function | Used to cancel the self diag "U1" trouble. | |
| | | | | Operation/ procedure | After cancelling the trouble, the simulation is also cancelled automatically. | |
| | General trouble | 14 | | Purpose/ function | Used to cancel the troubles other than "U1", "U2", "PF", and "F3" trouble. | |
| | | | | Operation/ procedure | After cancelling the trouble, the simulation is also cancelled automatically. | |
| | Paper feed tray | 15 | | | SIMULATION NO.15<br>TRAY1:** TRAY2:** TRAY3:**<br>TROUBLE CODE<br>00: NO TROUBLE<br>01: PT DISK TROUBLE<br>02: TRAY UP TROUBLE<br>04: TRAY DOWN TROUBLE | |
| | | | | Purpose/ function | Used to cancel the self diag "F3" trouble. | |
| | | | | Operation/ procedure | The trouble code corresponding to the trouble is displayed. Pressing the print button cancels the trouble as well as the test command. | |
| | Memory | 16 | | Purpose/ function | Used to cancel the self diag "U2" trouble. | |
| | | | | Operation/ procedure | After cancelling the trouble, the simulation is also cancelled automatically. | |
| | Communication | 17 | | Purpose/ function | Used to cancel the self diag trouble "PF" (when copying is inhibited by the host computer). | |
| | | | | Operation/ procedure | After cancelling the trouble, the simulation is also cancelled automatically. | |

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Setting | Option | 26 | | | SIMULATION NO.26<br>INPUT 1-8<br>1. OPTION SETUP.<br>2. TRAY1 SIZE SETUP.<br>3. AUDITOR SELECTION.<br>4. (NO PROGRAM)<br>5. COUNTER MODE SETUP.<br>6. DESTINATION SETUP.<br>7. DRUM SENSITIVITY SETUP.<br>8. TRAY EMPTY DATA SETUP. | |
| | | | 1 | Purpose/ function | Used to program the option setting.<br>Use this test command when installing an option. | |
| | | | | Operation/ procedure | Enter the number corresponding to the option installation state and press the print button.<br>If this setting is improper, a trouble code is displayed.<br>SIMULATION NO.26-1<br>OPTION SETUP<br>1. FINISHER/NO SORTER.<br>2. NO FINISHER/NO SORTER.<br>3. SORTER/STAPLE SORTER. | |
| | Destination | | 6 | Purpose/ function | Used to set the specifications for the destination. | |
| | | | | Operation/ procedure | Enter the code number corresponding to the destination and press the copy button, then the specifications for the destination will be set.<br>SIMULATION NO.26-6<br>[INCH]<br>1. SEC 2. SECL 3. OTHER<br>[AB (B5)]<br>4. JAPAN/15A 5. JAPAN/20A<br>[AB (A5)]<br>6. SEEG 7. SUK 8. SCA<br>9. OTHER<br>PLEASE SELECT DESTINATION BY 10 KEY PAD. | |

**Counter**

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Setting | Maintenance cycle | 21 | | | SIMULATION NO.21<br>INPUT 1-2<br>1. MAINTENANCE CYCLE SETTING.<br>2. (NO PROGRAM) | |
| | | | 1 | Purpose/ function | Used to set the maintenance cycle. | |
| | | | | Operation/ procedure | When this test command is performed, the currently set maintenance cycle is displayed on the COPIES MADE display.<br>Enter the code number corresponding to the maintenance cycle and press the print button. | |

| Purpose | Section | Main code | Sub code | | Description | Ref. page |
|---|---|---|---|---|---|---|
| Setting | Maintenance cycle | 21 | 1 | | SIMULATION NO.21-1<br>SELECT MAINTENANCE CYCLE (1-3):<br>1. 125K 2. 250K 3. NONE<br><br>When "3. NONE" is selected, the maintenance display is not given though many copies are made. | |
| | Count mode (Maintenance/ total) | 26 | | | SIMULATION NO.26<br>INPUT 1-8<br>1. OPTION SETUP.<br>2. TRAY1 SIZE SETUP.<br>3. AUDITOR SELECTION.<br>4. (NO PROGRAM)<br>5. COUNTER MODE SETUP.<br>6. DESTINATION SETUP.<br>7. DRUM SENSITIVITY SETUP.<br>8. TRAY EMPTY DATA SETUP. | |
| | | | 5 | Purpose/ function | Used to set the count mode of the total counter and the maintenance counter. | |
| | | | | Operation/ procedure | Enter the code number corresponding to the count mode and press the print button.<br><br>SIMULATION NO.26-5<br>COUNTER MODE SETUP.<br>CODE TOTAL COUNT , MAINTE COUNT<br>0 DOUBLE COUNT DOUBLE COUNT<br>1 SINGLE COUNT DOUBLE COUNT<br>2 DOUBLE COUNT SINGLE COUNT<br>3 SINGLE COUNT SINGLE COUNT<br>PLEASE SELECT BY<br>10 KEY PAD. | |
| Clear | Maintenance counter | 20 | | Purpose/ function | Used to set the maintenance counter value arbitrarily. | |
| | | | | Operation/ procedure | Select the number to execute and press the print button, then the maintenance counter will be reset. | |

| Purpose | Section | Main code | Sub code | | Description | Ref. page |
|---|---|---|---|---|---|---|
| Clear | Misfeed counter | 24 | | | SIMULATION NO.24<br>INPUT 1-7<br>1. JAM COUNTER DATA CLEAR.<br>2. ERROR (TROUBLE) COUNTER DATA CLEAR.<br>3. DUPLEX COUNTER CLEAR.<br>4. RDH/RADF COUNTER DATA CLEAR.<br>5. STAPLE COUNTER CLEAR.<br>6. TRAY COUNTER CLEAR.<br>7. MEMBRANCE DECREASE ADJUSTMENT CLEAR. | |
| | | | 1 | Purpose/ function | Used to clear the misfeed counter and the misfeed history.<br>After maintenance, clear this counter. | |
| | | | | Operation/ procedure | After executing the test command, enter the number corresponding to the unit to be reset and press the print button.<br>Then select YES with the numeric key and press the print button.<br>SIMULATION NO.24-1<br>JAM COUNTER CLEAR. ... (1)<br>1. MACHINE 2. RDH 3. BOTH<br>When "1" is selected and the following procedure is performed, the jam counter in the main body is cleared.<br>When "2" is selected and the following procedure is performed, the jam counter in the RDH is cleared.<br>When "3" is selected and the following procedure is performed, the jam counters in the main body and in the RDH are cleared.<br>SIMULATION NO.24-1<br>* COUNTER CLEAR.<br>ARE YOU SURE? ... (2)<br>1. YES 2. NO | |
| | Trouble counter | | 2 | Purpose/ function | Used to clear the rouble counter and the trouble history.<br>After maintenance, clear this counter. | |
| | | | | Operation/ procedure | After executing the test command, select YES with the numeric key and press the print button. | |
| | Copy counter (Duplex) | | 3 | Purpose/ function | Used to clear the copy counter in the duplex unit.<br>After maintenance, clear this counter. | |
| | | | | Operation/ procedure | After executing the test command, select YES with the numeric key and press the print button. | |
| | Copy counter (RDH) | | 4 | Purpose/ function | Used to clear the copy counter in the RDH unit.<br>After maintenance, clear this counter. | |
| | | | | Operation/ procedure | After executing the test command, select YES with the numeric key and press the print button. | |
| | Copy counter (Stapler) | | 5 | Purpose/ function | Used to clear the counter in the staple unit.<br>After maintenance, clear this counter. | |
| | | | | Operation/ procedure | After executing the test command, select YES with the numeric key and press the print button. | |
| | Copy counter (Paper tray) | | 6 | Purpose/ function | Used to clear the copy counter in the paper tray unit.<br>AFter maintenance, clear this counter. | |
| | | | | Operation/ procedure | After executing the test command, select YES with the numeric key and press the print button. | |

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Clear | Copy counter (Photoconductor drum) | | 7 | Purpose/ function | Used to clear the photoconductor drum correction counter.<br>Perform this test command when replacing the photoconductor drum. | |
| | | | | Operation/ procedure | After executing the test command, select YES with the numeric key and press the print button.<br>SIMULATION NO. 24-7<br>MEMBRANCE DECREASE ADJUSTMENT CLEAR.<br>ARE YOU SURE?<br>1. YES 2. NO | |
| | Developer counter | 42 | | Purpose/ function | Used to reset the developer counter.<br>The developer counter in the installed developer unit is reset. | |
| | | | | Operation/ procedure | After executing the test command, select YES with the numeric key and press the print button. | |
| Confirmation | Copy counter (Each unit in the body) | 22 | | | SIMULATION NO.22<br>INPUT 1-5<br>1. COUNTER DATA DISPLAY.<br>2. JAM COUNTER DATA DISPLAY.<br>3. ERROR COUNTER DATA DISPLAY.<br>4. KEY OPERATOR CODE DISPLAY.<br>5. ROM VERSION DATA DISPLAY. | |
| | | | 1 | Purpose/ function | Used to check the copy count value of each unit.<br>Used to check the maintenance timing. | |
| | | | | Operation/ procedure | This commands displays 12 kinds of counter values on the LCD display. Composed of four screens, each on of them displays three kinds of counter values. Switching between screens is performed with the [→] Key. | |

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Confirmation | Copy counter (Each unit in the body) | | 1 | | SIMULATION NO. 22-1<br>TOTAL : **, ***, ***<br>MAINTENANCE : **, ***, ***<br>COPIES : **, ***, *** 1/4<br>→ KEY ON<br>SIMULATION NO. 22-1<br>DEVELOPER : **, ***, ***<br>RDH : **, ***, ***<br>STAPLER : **, ***, *** 2/4<br>→ KEY ON<br>SIMULATION NO. 22-1<br>DUPLEX : **, ***, ***<br>BYPASS TRAY : **, ***, ***<br>TRAY 1 : **, ***, *** 3/4<br>→ KEY ON<br>SIMULATION NO. 22-1<br>TRAY 2 : **, ***, ***<br>TRAY 3 : **, ***, ***<br>SDF : **, ***, *** 4/4<br>→ KEY ON | |
| | Misfeed counter | | 2 | Purpose/ function | Used to check the total misfeed positions in the main body and in the RDH and to check the number of misfeed at each position.<br>If the number of misfeed is great enough, it might require repair. The misfeed rate is obtained by dividing this counter value with the total counter value. | |
| | | | | Operation/ procedure | In the first screen, select the main body or the RDH with the numeric key and press the print button. Then the total number of misfeed in the selected unit is displayed.<br>If the number of misfeed is great enough, it might require repair. The misfeed rate is obtained by dividing this counter value with the total counter value.<br>SIMULATION NO.22-2<br>SELECT JAM COUNTER. (1~2)<br>1. MACHINE 2. RDH<br>When a misfeed occurs, press the [*] button, and the next misfeed position is displayed. The misfeed history is cleared from the old one to keep the history of max. 256 misfeeds.<br>One screen shows the max. 10 of misfeed history. If there are more than 10 misfeeds, press the → key to scroll the screen. | |

| Purpose | Section | Main code | Sub code | | Description | Ref. page |
|---|---|---|---|---|---|---|
| Confirmation | Misfeed counter | 22 | 2 | | SIMULATION NO. 22-2 .....1<br>TOTAL MACHINE JAM: **, ***, ***<br>↓ [*] KEY ON<br>↓<br>****, ****, ****, ****, ****<br>****, ****, ****, ****, ****<br>1/*<br>↓ [→] KEY ON<br>****, ****, ****, ****, ****<br>****, ****, ****, ****, ****<br>2/*<br>↓ [→] KEY ON<br><br>The table showings the display code and the misfeed position is inserted. | |
| | Trouble counter | | 3 | Purpose/ function | Used to check the total number of troubles (self diag) and the number of each trouble.<br>If the number of misfeed is great enough, it might require repair. The trouble rate is obtained by dividing this counter value with the total counter value. | |
| | | | | Operation/ procedure | In the first screen, press the print button. Then the total number of troubles in the selected unit is displayed.<br><br>SIMULATION NO. 22-3<br>TOTAL ERRORS: **, ***, ***<br>(Trouble code) ↓ INFORMATION KEY ON<br>↓<br>**/**, **/**, **/**, **/, **/**<br>**/**, **/**, **/**, **/, **/**<br>↓ SCROLL KEY ON 1/*<br>**/**, **/**, **/**, **/, **/**<br>**/**, **/**, **/**, **/, **/**<br>↓ SCROLL KEY ON 2/*<br><br>When a trouble occurs, press the [*] button, and the next trouble code is displayed. The misfeed history is cleared from the old one to keep the history of max. 128 misfeeds.<br>One screen shows the max. 10 of misfeed history. If there are more than 10 misfeeds, press the → key to scroll the screen. | |

**Report**

| Purpose | Section | Main code | Sub code | | Description | Ref. page |
|---|---|---|---|---|---|---|
| Print out | | 23 | | | SIMULATION NO.23<br>INPUT 1-5<br>1. COUNTER DATA PRINTOUT.<br>2. JAM COUNTER DATA PRINTOUT.<br>3. ERROR COUNTER DATA PRINTOUT.<br>4. KEY OPERATOR CODE PRINTOUT.<br>5. ROM VERSION DATA PRINTOUT. | |
| | Copy counter (Each unit in the body) | | 1 | Purpose/ function | Used to print out the total copy count and the copy count of each unit by using the auditor commander (SF-EA13). | |
| | | | | Operation/ procedure | After executing the test command, the following is displayed on he LCD display. Press the START/STOP key of the auditor commander (SF-EA13), and the total copy count and the copy count of each unit are printed out. | |

| Purpose | Section | Main code | Sub code | | Description | Ref. page |
|---|---|---|---|---|---|---|
| Print out | Copy counter (Each unit in the body) | 23 | 1 | | **23-01 (Each counter print out)**<br>TOTAL : 2,171<br>MAINTENANCE : 2,171<br>COPIES : 2,170<br>DEVELOPER : 2,171<br>RDH : 1,219<br>STAPLER : 9<br>DUPLEX UNIT : 367<br>BYPASS TRAY : 161<br>TRAY1 : 1,318<br>TRAY2 : 148<br>TRAY3 : 91 | |
| | Misfeed data | | 2 | Purpose/ function | Used to print the total number of misfeed and the misfeed history of the main body and the RDH by using the auditor commander (SF-EA13). If the number of misfeed is great enough, it might require repair. The misfeed rate is obtained by dividing this counter value with the total counter value. | |
| | | | | Operation/ procedure | In the first screen, select the main body or the RDH with the numeric key and press the print button. Then press the START/STOP key of the auditor commander (SF-EA13), and the total number of misfeed and the misfeed history of the selected unit will be printed.<br>The misfeed positions are printed from the new one, and the old one is cleared in sequence to keep the max. 256 new items, which are printed.<br>**23-02 (JAM counter print out)**<br>TOTAL MACHINE JAM:<br>10<br>PPD2 BYPAS TRAY1 PPD3<br>PPD3 PPD3 PPD3 PPD3<br>PPD3 PPD3<br>TOTAL RDH JAM:<br>1<br>OG_ST | |
| | Trouble data | | 3 | Purpose/ function | Used to print the total number of troubles (self diag) and the trouble history by using the auditor commander (SF-AE13).<br>If the number of trouble is great enough, it might require repair. The trouble rate is obtained by dividing this counter value with the total counter value. | |
| | | | | Operation/ procedure | After execution of the test command, press the START/STOP key of the auditor commander (SF-AE13), and the total number of trouble (self diag) and the trouble history will be printed.<br>The trouble history is printed from the newest trouble code in sequence. The old one is cleared to keep the max. 128 items of history, which are printed.<br>**23-03 (Error counter print out)**<br>TOTAL ERRORS:<br>10<br>C1/00 U3/23 L3/00 F2/35<br>F2/35 F2/31 F2/31 F2/31<br>L4/01 L4/01 | |

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Print out | User program | 23 | 4 | Purpose/ function | Used to print the key operator code by using the auditor commander (SF-AE13).<br>This test command is used when the customer has forgotten the key operator code. | |
| | | | | Operation/ procedure | After execution of the test command, press the START/STOP key of the auditor commander (SF-AE13), then the key operator code will be printed.<br>(Note) This test command is used when the customer has forgotten the key operator code. However, this command should not be known to the customer.<br><br>**24-04 (Key operator code print out)**<br>KEY OPERATOR CODE: 00005 | |
| | | 28 | | SIMULATION NO.28<br>INPUT 1-4<br>1. PRINTER CHARACTER GENERATOR PRINTOUT.<br>2. PRINTER TEST OPERATION.<br>3. KEY OPERATOR DATA PRINTOUT.<br>4. BACKUP DATA PRINTOUT. | | |
| | | | 3 | Purpose/ function | Used to print the list of all settings of the user program by using the auditor commander (SF-AE13). | |
| | | | | Operation/ procedure | Press the START/STOP key of the auditor commander (SF-AE13), then printing will be started.<br>When servicing, use this command to print all the settings for memory trouble and the PWB replacement. | |
| | ROM version | 23 | 5 | Purpose/ function | Used to print the ROM version of each unit by using the auditor commander (SF-AE13). | |
| | | | | Operation/ procedure | After executing the test command, press the START/STOP key of the auditor commander (SF-AE13), then the ROM version of each unit will be printed.<br><br>**23-05 (ROM version data print out)**<br>MAIN : Ver. 2.26<br>OPE : Ver. 1.20<br>DATA : Ver. 1.25<br>MIRROR : Ver. 03<br>FINISHER : Ver.<br>ROM : Ver. 0.00 | |
| | List of all set values | 28 | 4 | Purpose/ function | Used to print all the test commands set values and all adjustment values by using the auditor commander (SF-AE13).<br>When servicing, use this command to print all the settings for memory trouble and the PWB replacement. | |

| Purpose | Section | Main code | Sub code | Description | Ref. page |
|---|---|---|---|---|---|
| Print out | List of all set values | 28 | 4 | **28-04 (Simulation set values print out)** | |

```
SIM.00_01 -----  30
      _02 ----- 428
      _03 ----- 301
      _04 ----- 393
      _05 -----  47
      _07 -----  24

SIM.21_01 -----   3

SIM.25_02 ----- 148

SIM.26_01 -----   2
      _02 -----   2
      _03 -----   1
      _05 -----   0
      _06 -----   4
      _07 -----   2
      _08 -- A:  12
             B:  12
             C:  12

SIM.27_01 -----   2
      _05 ---- 00000000

SIM.43 --------   3

SIM.44_01 -----   6
      _02 -----   2
      _03 -----   1
      _04 -----  75

SIM.46 -- AE_W: 615
       AE_W(TS): 595
            ME1: 660
            ME5: 580
           PHT1: 610
           PHT5: 520
         ME1(TS): 650
         ME5(TS): 575

SIM.48_01 -- A:  28
             B:  70
             C:  31
             D:  84
             E:  15
             F:  33
      _02 -----  15
      _03 -- A:  28
             B:  70
             C:  15
      _04 -- A:  31
             B:  84
             C:  33
      _05 -----  15

SIM.50_01 -- A:  90
     (_03)   B:  75
             C:  10
             D:  15
      _04 -----  15

SIM.51_01 -----   8
      _02 -- A:  35
     (_03)   B:  22
             C:  22
             D:  22
             E:  22
      _04 -----  25

SIM.52_01 -----  40
      _02 -----  39

SIM.53_01 -----  16
      _02 -----  16
      _03 -----  16
SIM.54_01 -----  50
      _02 -----  20
```

**Program**

| Purpose | Section | Main code | Sub code | Description | | Ref. page |
|---|---|---|---|---|---|---|
| Confirmation | User program | 22 | | SIMULATION NO.22<br>INPUT 1-5<br>1. COUNTER DATA DISPLAY.<br>2. JAM COUNTER DATA DISPLAY.<br>3. ERROR COUNTER DATA DISPLAY.<br>4. KEY OPERATOR CODE DISPLAY.<br>5. ROM VERSION DATA DISPLAY. | | |
| | | | 4 | Purpose/ function | Used to display the key operator code.<br>This test command is used when the customer has forgotten the key operator code. | |
| | | | | Operation/ procedure | (Note) This test command is used when the customer has forgotten the new operator code, but it should not be known to the customer.<br>SIMULATION NO.22-4<br>KEY OPERATOR CODE:***** | |

**Others**

| Purpose | Section | Main code | Sub code | | Description | Ref. page |
|---|---|---|---|---|---|---|
| Confirmation | ROM version | 22 | | | SIMULATION NO.22<br>INPUT 1-5<br>1. COUNTER DATA DISPLAY.<br>2. JAM COUNTER DATA DISPLAY.<br>3. ERROR COUNTER DATA DISPLAY.<br>4. KEY OPERATOR CODE DISPLAY.<br>5. ROM VERSION DATA DISPLAY. | |
| | | | 5 | Purpose/ function | Used to check the ROM version of each unit. | |
| | | | | Operation/ procedure | The ROM version of each unit is displayed.<br>SIMULATION NO.22-5<br>MAIN : V*.**  MIRROR : V*.**<br>OPE : V*.**  FINISHER : V*.**<br>DATA : V*.** (***)  RDH : V*.**<br>(Note) V*.** : ROM version data<br>(***) : ENG . . . English<br>JPN . . . Japanese<br>GER . . . German<br>FRN . . . French<br>DUT . . . Dutch<br>SPN . . . Spanish<br>ITL . . . Italian | |

## 5. JAM displays and contents

| Display/print | Content |
|---|---|
| BYPASS/BYPAS | Manual paper feed tray FEED JAM |
| TRAY1 | Tray 1 FEED JAM |
| TRAY2 | Tray 2 FEED JAM |
| TRAY3 | Tray 3 FEED JAM |
| DUP | Duplex FEED JAM |
| MPFD | MPFD remaining JAM |
| PFD1 | PFD1 remaining JAM |
| PFD2 | PFD2 remaining JAM |
| PFD3 | PFD3 remaining JAM |
| DPFD | DPFD remaining JAM |
| PPD1 | PPD1 remaining JAM |
| PPD2 | PPD2 remaining JAM |
| PPD3 | PPD3 remaining JAM |
| PSD | PSD remaining JAM |
| POD | POD remaining JAM |
| DSBD | DSBD remaining JAM |
| DPPD | DPPD remaining JAM |
| DPID | DPID remaining JAM |

| Display/print | Content |
|---|---|
| SB | DPPD remaining JAM |
| FPPD1 | FPPD remaining JAM |
| FPOD | FPOD remaining JAM |
| FJPS | FJPS undetected JAM |
| FPOHS | Pusher pushing JAM |
| OG_FD | RDH FEED JAM |
| UPD1 | RDH UPD1 remaining JAM |
| REV1 | RDH reverse spare paper feed - UPD3 does not turn on. |
| REV2 | RDH reverse - UPD2 does not turn on. |
| REV3 | RDH UPD2 ON - UPD3 does not turn on. |
| UPD2 | RDH UPD2 remaining JAM |
| UPD3 | RDH UPD3 remaining JAM |
| EXT1 | RDH paper exit - UPD4 does not turn on. |
| UPD4 | RDH UPD4 remaining JAM |
| UPD5 | RDH UPD5 remaining JAM |
| UPD6 | RDH UPD6 remaining JAM |
| S_PD2 | UPD2 does not turn on after fed in the SDF mode document |

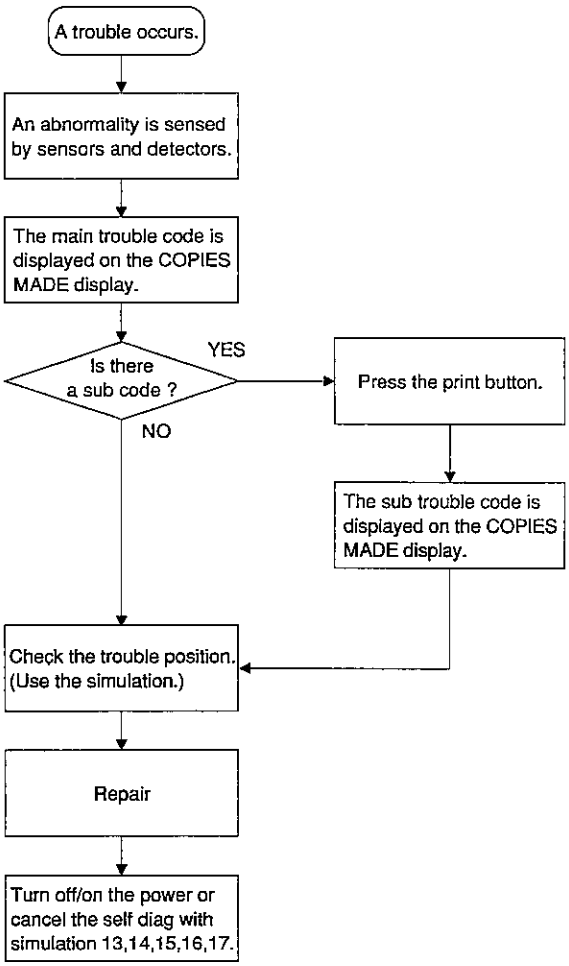
# [9] SELF DIAGNOSTICS

## 1. General

This machine has self diagnostics to notify the customer and the serviceman when a trouble occurs during machine operation. The purposes of self diagnostics are as follows:

1) To assure safety when a trouble is sensed, the machine is stopped simultaneously.
2) To minimize machine damage, when a trouble is sensed, the machine is stopped simultaneously.
3) To know the exact area of the machine where the trouble occured by using trouble codes, thereby shortening the recovery time of the machine. (For improved repair efficiency, the repair parts should be arranged in advance.)

## 2. Self diag operations and flowchart


A trouble occurs.
An abnormality is sensed by sensors and detectors.
The main trouble code is displayed on the COPIES MADE display.
Is there a sub code ?
YES
NO
Press the print button.
The sub trouble code is displayed on the COPIES MADE display.
Check the trouble position. (Use the simulation.)
Repair
Turn off/on the power or cancel the self diag with simulation 13,14,15,16,17.

## 3. Test commands used for the Self diag and cancel

| Trouble code | Test command used to cancel |
|---|---|
| U1 | T.C13 |
| U2 | T.C16 |
| F3 | T.C15 |
| PF | T.C17 |
| U4-02, 03/F2-33, 35/F3/L8-01, 02 | POWER OFF-ON |
| CH/PC/NOT COPY READY | Cleared when the trouble is cancelled. |
| The other troubles | TC14 |

## 4. Self diag during execution of test command

EE/L2/L8-03/U5

## 5. Self diag sent to Modem I/F

F1-10/U4-02, 03/U5/F2-31, 32, 33, 35, 37/F3/L8-01, 02

(Note)
When the destination is set to "1" (Japan) or "4" (SEC) in TC26-6, judgement of self diag F2-31, 32, 37 is performed. When, however, set to the other destination, it is not performed.

# 6. Self diag list

| Main code | Section | Sub code | Description | |
|---|---|---|---|---|
| L1 | Optical | 00 | Content | Scanner unit feed trouble |
| | | | Details | The scanner unit does not complete feeding within 6 sec. |
| | | | Cause | 1) Mirror motor control circuit defect<br>2) Main control PWB defect<br>3) Scanner unit drive section defect<br>4) Mirror motor unit defect |
| | | | Remedy | 1) The scanner unit operation is checked with TC1-1.<br>2) The self diag display is cleared with TC14. |
| L2 | Paper transport | 00 | Content | Resist roller operation trouble |
| | | | Details | During execution of TC7-2, 3, 7, the RRC ON (RRC in) signal from the mirror motor control PWB is not recognized in the main control PWB. |
| | | | Cause | 1) Mirror motor control circuit defect<br>2) Main control PWB defect |
| | | | Remedy | 1) Perform the copy operation to check the RRC ON (RRC in) signal.<br>2) Clear the self diag display with TC14. |
| L3 | | 00 | Content | Scanner unit return trouble |
| | | | Details | The scanner unit does not complete returning within 3.5 sec during initial operation or after scanning. (The home position is not sensed.) |
| | | | Cause | 1) Mirror motor control circuit defect<br>2) Main control PWB defect<br>3) Scanner unit drive section defect<br>4) Mirror motor unit defect |
| | | | Remedy | 1) Check the scanner unit operation with TC1-1.<br>2) Clear the self diag display with TC14. |
| L4 | Process (Photoconductor drum drive section) | 01 | Content | Photoconductor drum drive section lock |
| | | | Details | The specified rpm is not detected within 1 sec after the photoconductor drum drive motor ON command is issued. |
| | | | Cause | 1) Photoconductor drum motor control circuit defect<br>2) main control PWB defect<br>3) Drive section mechanical defect (lock, etc.)<br>4) Photoconductor drum drive motor unit defect |
| | | | Remedy | 1) Check the photoconductor drum for normal rotations with TC25-1.<br>2) Clear the self diag display with TC14. |
| | Drive (Main motor) | 02 | Content | Drive section lock |
| | | | Details | The specified rpm is not detected within 1 sec after the main motor ON command is issued. |
| | | | Cause | 1) Main motor control circuit defect<br>2) Main control PWB defect<br>3) Drive section mechanical defect (lock, etc.)<br>4) Main motor unit defect |
| | | | Remedy | 1) Check the main motor for normal operation with TC25-1.<br>2) Clear the self diag display with TC14. |
| | Blower motor (Suction) | 21 | Content | Blower motor (suction) lock |
| | | | Details | The specified rpm is not detected within 1 sec after the blower motor ON command is issued. |
| | | | Cause | 1) Blower motor control circuit defect<br>2) Main control PWB defect<br>3) Blower motor duct clogging (lock, etc.)<br>4) Blower motor defect |
| | | | Remedy | 1) Check the blower motor for normal operation with TC6-2.<br>2) Clear the self diag display with TC14. |
| | Blower motor (Blow) | 22 | Content | Blower motor (blow) lock |
| | | | Details | The specified rpm is not detected within 1 sec after the blower motor ON command is issued. |
| | | | Cause | 1) Blower motor control circuit defect<br>2) Main control PWB defect<br>3) Blower motor duct clogging (lock, etc.)<br>4) Blower motor defect |
| | | | Remedy | 1) Check the blower motor for normal operation with TC6-2. |

| Main code | Section | Sub code | Description | |
|---|---|---|---|---|
| L4 | Blower motor (Blow) | 22 | | 2) Clear the self diag display with TC14. |
| L5 | Optical | 01 | Content | Lens, No. 4/5 mirror feed trouble |
| | | | Details | 1) The lens and the No. 4/5 mirror do not reach the specified positions within 12.5 sec after the drive signal is issued. |
| | | | Cause | 1) Mirror motor control circuit defect<br>2) Main control PWB defect<br>3) Lens or No. 4/5 mirror drive motor defect<br>4) Lens or No. 4/5 mirror drive system defect |
| | | | Remedy | 1) Check the lens unit and the No. 4/5 mirror unit operations with TC1-3.<br>2) Clear the self diag display with TC14. |
| | | 02 | Content | Lens initial trouble |
| | | | Details | 1) The lens does not complete the initial operation within 12.5 sec after the drive signal is issued. |
| | | | Cause | 1) Mirror motor control circuit defect<br>2) Main control PWB defect<br>3) Lens drive motor defect<br>4) Lens drive system defect |
| | | | Remedy | 1) Check the lens unit operation with TC1-3.<br>2) Clear the self diag display with TC14. |
| | | 04 | Content | No. 4/5 mirror initial trouble |
| | | | Details | The No. 4/5 mirror does not complete the initial operation within 10 sec after the drive signal is issued. |
| | | | Cause | 1) Mirror motor control circuit defect<br>2) Main control PWB defect<br>3) No. 4/5 mirror drive motor defect<br>4) No. 4/5 mirror drive system defect |
| | | | Remedy | 1) Check the No. 4/5 mirror unit operation with TC1-3.<br>2) Clear the self diag display with TC14. |
| L8 | DC power unit | 01 | Content | Zero cross pulse (FW) trouble |
| | | | Details | 1) The zero cross pulse is not issued.<br>2) Zero cross pulse (FW) output level abnormality<br>3) The zero cross pulse is not sensed. |
| | | | Cause | 1) DC powder unit defect<br>2) Main control PWB defect |
| | | | Remedy | 1) Check the zero cross pulse (FW) waveform with an oscilloscope.<br>2) Clear the self diag display with TC14. |
| | | 02 | Content | Zero cross pulse (FW) trouble |
| | | | Details | 1) The zero cross pulse (FW) frequency exceeds the specified range. 50Hz (46.15 – 53.93Hz), 60Hz (55.59 – 64.86Hz) |
| | | | Cause | 1) DC power unit defect<br>2) Main control PWB defect<br>3) AE sensor defect<br>4) Copy lamp defect |
| | | | Remedy | 1) Check the zero cross pulse (FW) waveform with an oscilloscope.<br>2) Clear the self diag display with TC14. |
| | Optical | 03 | Content | AE sensor trouble |
| | | | Details | 1) During execution of TC47, through the copy lamp voltage changes, the change in the AE sensor level is not sensed. |
| | | | Cause | 1) AC power unit defect<br>2) Main control PWB defect<br>3) AE sensor defect<br>4) Copy lamp defect |
| | | | Remedy | 1) Check the copy lamp voltage and the AE sensor output with TC47.<br>2) Clear the self diag display with TC14. |
| EE | Developer | EU | Content | Toner density sensor trouble (Undertoner) |
| | | | Details | 1) The toner density sensor output level 3.3V or more is detected with TC25-2 during toner density initial setting. |
| | | | Cause | 1) Toner density sensor defect<br>2) Main control PWB defect |
| | | | Remedy | 1) Check the toner density sensor output level with TC25-1.<br>2) Clear the self diag display with TC14. |

| Main code | Section | Sub code | Description | |
|---|---|---|---|---|
| EE | Developer | EL | Content | toner density sensor trouble (Overtoner) |
| | | | Details | 1) The toner density sensor output level 1.45V or less is detected with TC25-2 during toner density initial setting. |
| | | | Cause | 1) Toner density sensor defect<br>2) Main control PWB defect |
| | | | Remedy | 1) Check the toner density sensor output level with TC25-1.<br>2) Clear the self diag display with TC14. |
| H2 | Fuser | 00 | Content | Thermistor trouble |
| | | | Details | 1) Thermistor open<br>(The thermistor input pin voltage 4.5 V or more is sensed.) |
| | | | Cause | 1) Thermistor defect<br>2) Main control PWB defect<br>3) Fuser section connector defect<br>4) Fuser section connecter SW defect |
| | | | Remedy | 1) Check the thermistor line.<br>2) Check the line between the thermistor and the main control PWB.<br>3) Clear the self diag display with TC14. |
| H3 | | 00 | Content | Abnormal temperature in the fuser section |
| | | | Details | 1) The heat roller temperature exceeds 228°C.<br>(thermistor input terminal voltage 1.3V or more is detected. |
| | | | Cause | Thermistor defect<br>2) Main control PWB defect<br>3) AC power PWB defect<br>4) Fuser connector defect<br>5) Fuser connector SW defect |
| | | | Remedy | 1) Check the thermistor and its input circuit.<br>2) Check the heater lamp ON signal and the drive circuit with TC5-2.<br>3) Clear the self diag display with TC14. |
| H4 | | 00 | Content | Abnormal temperature in the fuser section |
| | | | Details | 1) The specified temperature (200°C) is not reached within 7 min after the power relay is turned on.<br>(The thermistor input terminal voltage 1.84V or more is detected.) |
| | | | Cause | 1) Thermistor defect<br>2) Main control PWB defect<br>3) AC power PWB defect |
| | | | Remedy | 1) Check the thermistor and its control circuit.<br>2) Check the heater lamp ON signal and the drive circuit with TC5-2.<br>3) Clear the self diag display with TC14. |
| U0 | Main control PWB, operation PWB | 00 | Content | Data communication trouble between the main control PWB and the operation PWB. (Judged by the main control PWB.) |
| | | | Details | 1) Serial communication parity, framing, overrun errors. (Judged by the CPU.) |
| | | | Cause | 1) PWB (RDH, finisher, framing, operation, auditor, mirror motor) in the slave side defects<br>2) Main control PWB defect |
| | | | Remedy | 1) Check the data communication line between the main control PWB and the slave PWB.<br>2) Clear the self diag display with TC13. |
| U1 | Main control PWB | 01 | Content | SRAM backup battery 1 voltage drop |
| | | | Details | 1) SRAM backup battery 1 voltage 2.2V or less is detected. |
| | | | Cause | |
| | | | Remedy | 1) Follow the battery replacement procedure.<br>2) Clear the self diag display with TC13. |
| | | 02 | Content | SRAM backup battery 2 voltage drop |
| | | | Details | 1) SRAM backup battery 1 voltage 2.2V or less is detected. |
| | | | Cause | |
| | | | Remedy | 1) Follow the battery replacement procedure.<br>2) Clear the self diag display with TC13. |
| | | 03 | Content | SRAM backup battery 1 and 2 voltage drop |
| | | | Details | 1) SRAM backup battery 1 and 2 voltages 2.2V or less are detected. |
| | | | Cause | |

| Main code | Section | Sub code | Description | |
|---|---|---|---|---|
| U1 | Main control PWB | 03 | Remedy | 1) Follow the battery replacement procedure.<br>2) Clear the self diag display with TC13. |
| U2 | Main control PWB | 01 | Content | Memory sum check error |
| | | | Details | 1) SRAM memory data and EEPROM memory data are changed.<br>(Note) When this rouble occurs, the data in the SRAM and the EEPROM are not reliable. |
| | | | Cause | 1) Main control PWB defect |
| | | | Remedy | 1) Perform remedy for U2 trouble.<br>2) Clear the self diag display with TC16. |
| U3 | Optical | 00 | Content | Data communication trouble between the main control PWB and the mirror motor PWB. |
| | | | Details | 1) Serial communication parity, framing, overrun errors (Judged by the CPU.) |
| | | | Cause | 1) Main control PWB defect<br>2) Mirror motor PWB defect |
| | | | Remedy | 1) Check the communication line between the main control PWB and the mirror motor PWB. |
| | | 20 | Content | Minor motor rotary encoder output signal trouble |
| | | | Details | 1) The mirror motor rotary encoder output signal is not detected within 100 msec after the mirror motor ON signal is issued. |
| | | | Cause | 1) Main control PWB defect<br>2) Mirror motor PWB defect<br>3) Mirror motor drive section lock<br>4) Minor motor defect |
| | | | Remedy | 1) Check the mirror motor rotary encoder output signal with TC1-1.<br>2) Clear the self diag display with TC14. |
| | | 21 | Content | Scanner unit home position trouble |
| | | | Details | 1) The mirror home position sensor OFF is sensed when the scanner unit starts scanning.<br>2) The mirror home position sensor ON is sensed at the timing of scanner unit return. (The scanner home position sensor output signal is not sensed normally.) |
| | | | Cause | 1) Main control PWB defect<br>2) Mirror motor PWB erect<br>3) Mirror motor drive section lock<br>4) Mirror motor defect<br>5) Mirror home position sensor defect |
| | | | Remedy | 1) Check the scanner unit home position sensor output signal with TC1-2.<br>2) Clear the self diag display with TC14. |
| | | 23 | Content | Scanner unit initial operation trouble |
| | | | Details | 1) It takes 5 sec or more to initialize the scanner unit. |
| | | | Cause | 1) Main control PWB defect<br>2) Mirror motor PWB defect<br>3) Mirror motor drive section defect<br>4) Mirror motor defect<br>5) Mirror home position sensor defect |
| | | | Remedy | 1) Check the initial operation with TC1-1.<br>2) Clear the self diag display with TC14. |
| | | 26 | Content | Mirror motor drive power voltage drop |
| | | | Details | 1) Mirror motor drive power voltage falls below 26V. |
| | | | Cause | 1) Mirror motor PWB defect<br>3) Mirror motor drive section defect<br>4) Mirror motor defect<br>5) DC power PWB defect |
| | | | Remedy | 1) Check the mirror motor drive power voltage.<br>2) Clear the self diag display with TC14. |
| | | 41 | Content | Lens shift operation trouble |
| | | | Details | 1) In initial operation, though the lens motor drive pulse is issued for max. shift distance + 100 steps, the lens home position sensor output polarity change is not detected.<br>2) In lens shifting, though the lens drive pulse is issued, the lens home position sensor output polarity change is not detected. |
| | | | Cause | 1) Mirror motor PWB defect<br>2) Lens home position sensor defect |

| Main code | Section | Sub code | Description | |
|---|---|---|---|---|
| U3 | Optical | 41 | | 3) Lens motor drive section lock<br>4) Lens motor defect |
| | | | Remedy | 1) Check the lens shift operation with TC1-3.<br>2) Clear the self diag display with TC14. |
| | | 42 | Content | No. 4/5 mirror shift operation trouble |
| | | | Details | 1) In initial operation, though the No. 4/5 mirror motor drive pulse is issued for max. shift distance + 100 steps, the No. 4/5 mirror home position sensor output polarity change is not detected. 2) In No. 4/5 mirror shifting, though the drive pulse is issued, the No. 4/5 mirror home position sensor output polarity change is not detected. |
| | | | Cause | 1) Mirror motor PWB defect<br>2) No. 4/5 mirror home position sensor defect<br>3) No. 4/5 mirror motor drive section lock<br>4) No. 4/5 mirror motor defect |
| | | | Remedy | 1) Check the No. 4/5 mirror shift operation with TC1-3.<br>2) Clear the self diag display with TC14. |
| U4 | Duplex | 02 | Content | Paper width alignment plate operation trouble |
| | | | Details | 1) The paper width alignment plate home position is not detected within 5 sec. |
| | | | Cause | 1) Paper width alignment plate home position sensor defect<br>2) Paper width alignment plate drive motor defect<br>3) paper width alignment plate drive section defect<br>4) Main control PWB defect |
| | | | Remedy | 1) Check the paper width alignment plate home position sensor output.<br>2) Check the paper width alignment plate drive circuit and the mechanism.<br>3) Clear the self diag display with TC14. |
| | | 03 | Content | Paper transport direction alignment plate home position sensor operation trouble |
| | | | Details | 1) The paper transport direction alignment plate home position is not detected within 5 sec. |
| | | | Cause | 1) Paper transport direction alignment plate home position sensor defect<br>2) Paper transport direction alignment plate driver motor defect<br>3) paper transport direction alignment plate drive motor erect<br>4) Main control PWB defect |
| | | | Remedy | 1) Check the paper transport direction alignment plate home position sensor output.<br>2) Check the paper transport direction alignment plate drive circuit and the mechanism.<br>3) Clear the self diag display with TC14. |
| U5 | RDH | 00 | Content | Data communication trouble between the main control PWB and the RDH control PWB |
| | | | Details | 1) Serial communication parity, framing, overrun errors (Judged by the CPU.) |
| | | | Cause | 1) Main control PWB defect<br>2) RDH control PWB defect |
| | | | Remedy | 1) Check the data communication line between the main control PWB and the RDH control PWB.<br>2) Clear the self diag display with TC14. |
| | | 11 | Content | RDH paper feed motor (UFM) trouble |
| | | | Details | 1) The lock signal (UFMLD) polarity change is not detected within 110 ms after the paper feed motor ON sinal is issued at power ON.<br>2) The UFMDIR signal polarity change is not detected within 380 ms after the paper feed motor reverse signal is issued in preliminary paper feed operation.<br>3) The UFMDIR signal HIGH level is detected within 30 ms though the paper feed motor ON signal is issued at power ON. |
| | | | Cause | 1) RDH control PWB defect<br>2) RDH paper feed motor defect<br>3) RDH paper feed mechanism defect<br>4) RDH paper feed motor rotation sensor defect |
| | | | Remedy | 1) Check the RDH operation with TC2-1, 2, 3.<br>2) Clear the self diag display with TC14. |
| | | 12 | Content | RDH transport motor (UTM) trouble |
| | | | Details | 1) The lock signal (UTMLD) polarity change is not detected within 10 ms after the transport motor ON signal is issued.<br>(Check is made only when a coy is produced in the first RDH mode after turning on the power.)<br>2) The UTMDIR polarity change is not detected within 380 ms after the transport motor reversion signal is issued. |

| Main code | Section | Sub code | | Description |
|---|---|---|---|---|
| U5 | RDH | 12 | | 3) The UTMDIR polarity change is detected within 50 ms after the transport motor reversion signal is issued. |
| | | | Cause | 1) RDH control PWB defect<br>2) RDH transport motor defect<br>3) RDH transport mechanism defect<br>4) RDH transport motor rotation sensor defect |
| | | | Remedy | 1) Check the RDH operation with TC2-1, 2, 3.<br>2) Clear the self diag display with TC14. |
| | | 13 | Content | RDH paper exit motor (UOM1) trouble |
| | | | Details | 1) The lock signal (UOM1LD) polarity change is not detected within 1 sec after the RDH paper exit motor (UOM1) ON signal is issued. |
| | | | Cause | 1) RDH control PWB defect<br>2) RDH paper exit (UOM1) motor defect<br>3) RDH paper exit mechanism defect<br>4) RDH paper exit motor (UOM1) rotation sensor defect |
| | | | Remedy | 1) Check the RDH operation with TC2-1, 2, 3.<br>2) Clear the self diag display with TC14. |
| | | 14 | Content | RDH paper exit motor (UOM2) trouble |
| | | | Details | 1) The lock signal (UOM2LD) polarity change is not detected within 1 sec after the RDH paper exit motor (UOM2) ON signal is issued. |
| | | | Cause | 1) RDH control PWB defect<br>2) RDH paper exit (UOM2) motor defect<br>3) RDH paper exit mechanism defect<br>4) RDH paper exit motor (UOM2) rotation sensor defect |
| | | | Remedy | 1) Check the RDH operation with TC2-1, 2, 3.<br>2) Clear the self diag display with TC14. |
| | | 15 | Content | RDH valve motor trouble |
| | | | Details | 1) The valve home position signal (UBPD) is not detected within 30 sec after the separation fan motor is issued. |
| | | | Cause | 1) RDH control PWB defect<br>2) Separation fan motor defect<br>3) Valve mechanism defect<br>4) Valve home position sensor defect<br>5) Separation fan ventilation section defect |
| | | | Remedy | 1) Check the RDH operation with TC2-1, 2, 3.<br>2) Clear the self diag display with TC14. |
| | | 16 | Content | RDH suction fan motor trouble |
| | | | Details | 1) The lock signal (UVFMLD) polarity change is not detected within 1 sec after the suction fan motor ON signal is issued. |
| | | | Cause | 1) RDH control PWB defect<br>2) Suction fan motor defect<br>3) Suction mechanism defect<br>4) Suction fan ventilation section defect |
| | | | Remedy | 1) Check the RDH operation with TC2-1, 2, 3.<br>2) Clear the self diag display with TC14. |
| | | 17 | Content | RDH blower fan motor trouble |
| | | | Details | The lock signal (UBFMLD) polarity change is not detected within 1 sec after the separation fan motor ON signal is issued. |
| | | | Cause | 1) RDH control PWB defect<br>2) Separation fan motor defect<br>3) Separation fan mechanism defect<br>4) Separation fan ventilation section defect |
| | | | Remedy | 1) Check the RDH operation with TC2-1, 2, 3.<br>2) Clear the self diag display with TC14. |
| U7 | MODEM/I/F | 00 | Content | Data communication trouble with the copier and the host computer |
| | | | Details | |
| | | | Cause | 1) Main control PWB defect<br>2) MODEM I/F defect<br>3) MODEM communication line defect<br>4) Host computer defect<br>5) MODEM defect |

| Main code | Section | Sub code | Description | |
|---|---|---|---|---|
| U7 | MODEM/I/F | 00 | Remedy | 1) If the cause is not determined earlier, cancel the copy inhibition in case of communication trouble with TC27-1.<br>2) Replace the defective unit.<br>3) Clear the self diag display with TC14. |
| U8 | Expansion memory | 00 | Content | Expansion memory installation trouble |
| | | | Details | 1) Defective contact between the expansion memory and the main control PWB<br>2) Improper setting of TC26-3 |
| | | | Cause | 1) Expansion memory defect<br>2) Expansion memory socket and plug contact defect<br>3) Main control PWB defect<br>4) Though TC26-3 is set to "Expansion memory YES", no expansion memory is mounted actually. |
| | | | Remedy | 1) Check the setting of TC26-3.<br>2) Check contact of the expansion memory socket and plug.<br>3) Clear the self diag display with TC14. |
| | | 01 | Content | Expansion memory initial trouble |
| | | | Details | When an expansion memory is newly installed and TC26-3 is set to "Expansion memory YES", initializing is not performed.<br>Though the initializing execution key is pressed, initializing is not performed. |
| | | | Cause | 1) Expansion memory defect<br>2) Expansion memory socket, plug contact defect<br>3) Main control PWB defect<br>4) Though TC26-3 is set to "Expansion memory YES", initializing is not performed. |
| | | | Remedy | 1) Check the setting of TC26-3, and perform initializing.<br>2) Check the contact of expansion memory socket and plug.<br>3) Clear the self diag display with TC14. |
| C1 | High voltage unit | 00 | Content | Main corona unit trouble |
| | | | Details | 1) Main corona unit output short<br>(The trouble signal is detected.) |
| | | | Cause | 1) Main corona unit output short<br>2) High voltage unit defect<br>3) TC8-2, 3, 4 improper adjustment<br>4) Overvoltage |
| | | | Remedy | 1) Check the main corona unit output for short.<br>2) Check the high voltage unit trouble signal.<br>3) Check and adjust the main corona unit voltage.<br>4) Clear the self diag display with TC14. |
| C2 | | 00 | Content | Transfer corona unit output short |
| | | | Details | 1) Transfer corona unit output short (The trouble signal is detected.) |
| | | | Cause | 1) Transfer corona unit output short<br>2) High voltage unit defect<br>3) TC8-6 adjustment defect<br>4) Overvoltage |
| | | | Remedy | 1) Check the transfer corona unit output for short.<br>2) Check the high voltage unit trouble signal.<br>3) Check and adjust the transfer corona unit voltage.<br>4) Clear the self diag display with TC14. |
| C3 | | 00 | Content | Separation corona unit trouble |
| | | | Details | 1) Separation corona unit output short<br>(The trouble signal is detected.) |
| | | | Cause | 1) Separation corona unit output short<br>2) High voltage unit defect<br>3) TC8-7 adjustment defect<br>4) Overvoltage |
| | | | Remedy | 1) Check the separation corona unit output for short.<br>2) Check the high voltage unit trouble signal.<br>3) Check and adjust the separation corona unit voltage.<br>4) Clear the self diag display with TC14. |
| F1 | Finisher | 00 | Content | Data communication trouble between the main control PWB and the finisher control PWB |
| | | | Details | 1) Serial communication parity, framing, overrun errors (Judged by the CPU.) |

| Main code | Section | Sub code | Description | |
|---|---|---|---|---|
| F1 | Finisher | 00 | Cause | 1) Main control PWB defect<br>2) Finisher control PWB |
| | | | Remedy | 1) Check the data communication line between the main control PWB and the finisher control PWB. |
| | | 01 | Content | Jogger home position sense trouble |
| | | | Details | 1) Though the specified pulses (255) of the jogger motor drive signal are issued in initializing operation, the jogger home position is not detected.<br>2) Though the specified pulses (255) of the jogger motor drive signal are issued in staple operation, the jogger home position is not detected. |
| | | | Cause | 1) Main control PWB defect<br>2) Finisher control PWB defect<br>3) Jogger motor defect<br>4) Jogger home position sensor defect<br>5) Jogger mechanism section defect |
| | | | Remedy | 1) Check the finisher operation with TC3-2, 3.<br>2) Clear the self diag display with TC14. |
| | | 04 | Content | Elevator home position detection trouble |
| | | | Details | 1) The elevator home position sensor ON is not detected within 2.5 sec after the finisher elevator motor ascending command is issued. 2) The elevator home position sensor OFF is not detected within 2.5 sec after the finisher elevator motor descending command is issued. |
| | | | Cause | 1) Main control PWB defect<br>2) Finisher control PWB defect<br>3) Elevator motor defect<br>4) Elevator home position sensor defect<br>5) Elevator mechanism defect |
| | | | Remedy | 1) Check the finisher operation with TC3-2, 3.<br>2) Clear the self diag display with TC14. |
| | | 06 | Content | Shift home position detection trouble |
| | | | Details | 1) The shift home position sensor output polarity change is not detected within 1 sec after the shift motor drive signal is issued. |
| | | | Cause | 1) Main control PWB defect<br>2) Finisher control PWB defect<br>3) Shift motor defect<br>4) Shift home position sensor defect<br>5) Shift mechanism defect |
| | | | Remedy | 1) Check the finisher operation with TC3-2, 3.<br>2) Clear the self diag display with TC14. |
| | | 10 | Content | Staple home position detection trouble |
| | | | Details | 1) The staple home position sensor output change is not detected within 0.4 sec after the staple motor drive signal is issued. |
| | | | Cause | 1) Main control PWB defect<br>2) Finisher control PWB defect<br>3) Staple motor defect<br>4) Staple home position sensor defect<br>5) Staple mechanism defect |
| | | | Remedy | 1) Check the finisher operation with TC3-2, 3.<br>2) Clear the self diag display with TC14. |
| | | 11 | Content | Kicker home position detection trouble |
| | | | Details | 1) The kicker home position or the kicker position sensor ON is not detected though the specified pulses (450) of the kicker motor drive signal are issued. |
| | | | Cause | 1) Main control PWB defect<br>2) Finisher control PWB defect<br>3) Staple motor defect<br>4) Kicker home position sensor defect<br>5) Kicker position sensor defect<br>6) Kicker mechanism defect |
| | | | Remedy | 1) Check the finisher operation with TC3-2, 3.<br>2) Clear the self diag display with TC14. |
| | | 12 | Content | Gate home position detection trouble |
| | | | Details | 1) The gate home position sensor output polarity change is not detected though the specified pulses (300) of the gate switch motor drive signal are issued. |

| Main code | Section | Sub code | Description | |
|---|---|---|---|---|
| F1 | Finisher | 12 | Cause | 1) Main control PWB defect<br>2) Finisher control PWB defect<br>3) Gate switch motor defect<br>4) Gate home position sensor defect<br>5) Gate mechanism defect |
| | | | Remedy | 1) Check the finisher operation with TC3-2, 3.<br>2) Clear the self diag display with TC14. |
| | | 13 | Content | Tray guide operation trouble |
| | | | Details | 1) The tray guide lower sensor or the tray guide lower sensor ON signal is snot detected though the specified pulses (450) of the tray guide upper motor ON signal are issued. |
| | | | Cause | 1) Main control PWB defect<br>2) Finisher control PWB defect<br>3) Tray guide motor defect<br>4) Tray guide upper or lower sensor defect<br>5) Tray guide mechanism defect |
| | | | Remedy | 1) Check the finisher operation with TC3-2, 3.<br>2) Clear the self diag display with TC14. |
| F2 | Process | 00 | Content | Toner density sensor trouble |
| | | | Details | 1) The toner density sensor output is not in the range of 0.7 - 4.6V. |
| | | | Cause | 1) Toner density sensor defect<br>2) Toner density sensor dirt<br>3) main corona grid voltage adjustment defect<br>4) Developer defect<br>5) Toner density defect<br>6) Developer unit defect (Doctor gap/MG roller main pole position)<br>7) Main control PWB defect<br>8) Developer unit connector defect |
| | | | Remedy | 1) Check the toner density sensor output with TC25-1.<br>2) Clear the self diag display with TC14. |
| | | 31 | Content | Photoconductor base surface detection trouble |
| | | | Details | 1) When measuring the photoconductor base surface, the image density sensor output is not in the range of 2.8V - 4.65V. |
| | | | Cause | 1) Image density sensor defect<br>2) Image density sensor dirt<br>3) Photoconductor drum insufficient cleaning<br>4) Developer bias voltage adjustment defect<br>5) Blank lamp defect<br>6) Main control PWB defect<br>7) Photoconductor drum defect |
| | | | Remedy | 1) Check the set values and the defective positions of the process unit with TC44-7, 9.<br>2) Clear the self diag display with TC14. |
| | | 32 | Content | Photoconductor drum mark detection trouble |
| | | | Details | 1) The photoconductor drum mark is not detected. |
| | | | Cause | 1) Photoconductor drum mark sensor defect<br>2) Photoconductor drum mark sensor dirt<br>3) Photoconductor drum insufficient cleaning<br>4) Blank lamp defect<br>5) Main control PWB defect<br>6) Photoconductor drum defect |
| | | | Remedy | 1) Check the set values and the defective positions of the process unit with TC44-7, 9.<br>2) Clear the self diag display with TC14. |
| | | 33 | Content | In the main corona grid voltage correction, the reference main corona grid voltage is not obtained within the specified voltage range. |
| | | | Details | |
| | | | Cause | 1) Image density sensor defect<br>2) Image density sensor dirt<br>3) Main corona grid voltage adjustment defect<br>4) High voltage unit defect<br>5) Developing bias voltage adjustment defect |

| Main code | Section | Sub code | Description | |
|---|---|---|---|---|
| F2 | Process | 33 | | 6) Toner density defect<br>7) Developer unit defect (Doctor gap/MG roller main pole position)<br>8) Main control PWB defect<br>9) Photoconductor drum defect |
| | | | Remedy | 1) Check the set values and the defective positions of the proces unit with TC44-7, 9, and TC8-2, 3, 4.<br>2) Clear the self diag display with TC14. |
| | | 35 | Content | The patch image density measurement is abnormally high or low. |
| | | | Details | |
| | | | Cause | 1) Image density sensor defect<br>2) Image density sensor dirt<br>3) Main corona grid voltage adjustment defect<br>4) High voltage unit defect<br>5) Developing bias voltage adjustment defect<br>6) Toner density defect<br>7) Developer unit defect (Doctor gap/MG roller main pole position)<br>8) Main control PWB defect<br>9) Photoconductor drum defect |
| | | | Remedy | 1) Check the set values and the defective positions of the process unit with TC44-7, 9 and TC8-2, 3, 4.<br>2) Clear the self diag display with TC14. |
| | | 37 | Content | Photoconductor drum mark sensor gain adjustment trouble |
| | | | Details | 1) The photoconductor drum mark sensor output is not in the range of 2.6V - 4.1V. |
| | | | Cause | 1) Photoconductor drum mark sensor defect<br>2) Photoconductor drum mark sensor dirt<br>3) Photoconductor drum insufficient cleaning<br>4) Blank lamp defect<br>5) Main control PWB defect<br>6) Photoconductor drum defect |
| | | | Remedy | 1) Check the set values and the defective positions of the process unit with TC44-7, 9.<br>2) Clear the self diag display with TC14. |
| F3 | Paper tray 1 | 11 | Content | Paper tray motor PT disc sensor trouble |
| | | | Details | 1) The paper tray motor rotation sensor output signal is not detected within 200 ms after the paper tray motor ON signal is issued. |
| | | | Cause | 1) Paper tray motor rotation sensor defect<br>2) Paper tray motor defect<br>3) Paper tray mechanism defect<br>4) Main control PWB defect |
| | | | Remedy | 1) Check the paper tray operation with TC6-3.<br>2) Clear the self diag display with TC15. |
| | | 12 | Content | Paper tray lift-up trouble |
| | | | Details | 1) The paper upper limit sensor ON signal is not detected within 22 sec after the paper tray motor lift up signal is issued.<br>2) The paper lower limit sensor ON signal is not detected within 1.6 sec after the paper tray motor lift up signal is issued. |
| | | | Cause | 1) Paper tray upper limit sensor defect<br>2) Paper tray lower limit sensor defect<br>3) Paper tray motor defect<br>4) Paper tray mechanism defect<br>5) Main control PWB defect |
| | | | Remedy | 1) Check the paper tray operation with TC6-3.<br>2) Clear the self diag display with TC15. |
| | | 13 | Content | Paper tray lift down trouble |
| | | | Details | 1) The paper lower limit sensor ON signal is not detected within 22 sec after the paper tray motor lift down signal is issued.<br>2) The paper upper limit sensor ON signal is not detected within 1.6 sec after the paper tray motor lift down signal is issued. |
| | | | Cause | 1) Paper tray upper limit sensor defect<br>2) Paper tray lower limit sensor defect<br>3) Paper tray motor defect<br>4) Paper tray mechanism defect<br>5) Main control PWB defect |

| Main code | Section | Sub code | Description | |
|---|---|---|---|---|
| F3 | Paper tray 1 | 13 | Remedy | 1) Check the paper tray operation with TC6-3.<br>2) Clear the self diag display with TC15. |
| | Paper tray 2 | 21 | Content | Paper tray motor PT disc sensor trouble |
| | | | Details | 1) The paper tray motor rotation sensor output signal is not detected within 200 ms after the paper tray motor ON signal is issued. |
| | | | Cause | 1) Paper tray motor rotation sensor defect<br>2) Paper tray motor defect<br>3) Paper tray mechanism defect<br>4) Main control PWB defect |
| | | | Remedy | 1) Check the paper tray operation with TC6-3.<br>2) Clear the self diag display with TC15. |
| | | 22 | Content | Paper tray lift up trouble |
| | | | Details | 1) The paper upper limit sensor ON signal is not detected within 12 sec after the paper tray motor lift up signal is issued.<br>2) The paper lower limit sensor OFF signal is not detected within 1.6 sec after the paper tray motor lift up signal is issued. |
| | | | Cause | 1) Paper tray upper limit sensor defect<br>2) Paper tray lower limit sensor defect<br>3) Paper tray motor defect<br>4) Paper tray mechanism defect<br>5) Main control PWB defect |
| | | | Remedy | 1) Check the paper tray operation with TC6-3.<br>2) Clear the self diag display with TC15. |
| F2 | Paper tray 2 | 23 | Content | Paper tray lift down trouble |
| | | | Details | 1) The paper lower limit sensor ON signal is not detected within 12 sec after the paper tray motor lift down signal is issued.<br>2) The paper upper limit OFF signal is not detected within 1 sec after the paper tray motor lift down signal is issued. |
| | | | Cause | 1) Paper tray upper limit sensor defect<br>2) Paper tray lower limit sensor defect<br>3) Paper tray motor defect<br>4) Paper tray mechanism defect<br>5) Main control PWB defect |
| | | | Remedy | 1) Check the paper tray operation with TC6-3.<br>2) Clear the self diag display with TC14. |
| | Paper tray 3 | 31 | Content | Paper tray motor PT disc sensor trouble |
| | | | Details | 1) The paper tray motor rotation sensor output signal is not detected within 200 ms after the paper tray motor ON signal is issued. |
| | | | Cause | 1) Paper tray motor rotation sensor defect<br>2) Paper tray motor defect<br>3) Paper tray mechanism defect<br>4) Main control PWB defect |
| | | | Remedy | 1) Check the paper tray operation with TC6-3.<br>2) Clear the self diag display with TC14. |
| | | 32 | Content | Paper tray lift up trouble |
| | | | Details | 1) The paper upper limit sensor ON signal is not detected within 12 sec after the paper tray motor lift up signal is issued.<br>2) The paper lower limit sensor OFF signal is not detected within 1.6 sec after the paper tray motor lift up signal is issued. |
| | | | Cause | 1) Paper tray upper limit sensor defect<br>2) Paper tray lower limit sensor defect<br>3) Paper tray motor defect<br>4) Paper tray mechanism defect<br>5) Main control PWB defect |
| | | | Remedy | 1) Check the paper tray operation with TC6-3.<br>2) Clear the self diag display with TC15. |
| | | 33 | Content | Paper tray lift down trouble |
| | | | Details | 1) The paper lower limit sensor ON signal is not detected within 12 sec after the paper tray lift motor lift down signal is issued.<br>2) The paper upper limit sensor OFF signal is not detected within 1 sec after the paper tray motor lift down signal is issued. |
| | | | Cause | 1) Paper tray upper limit sensor defect |

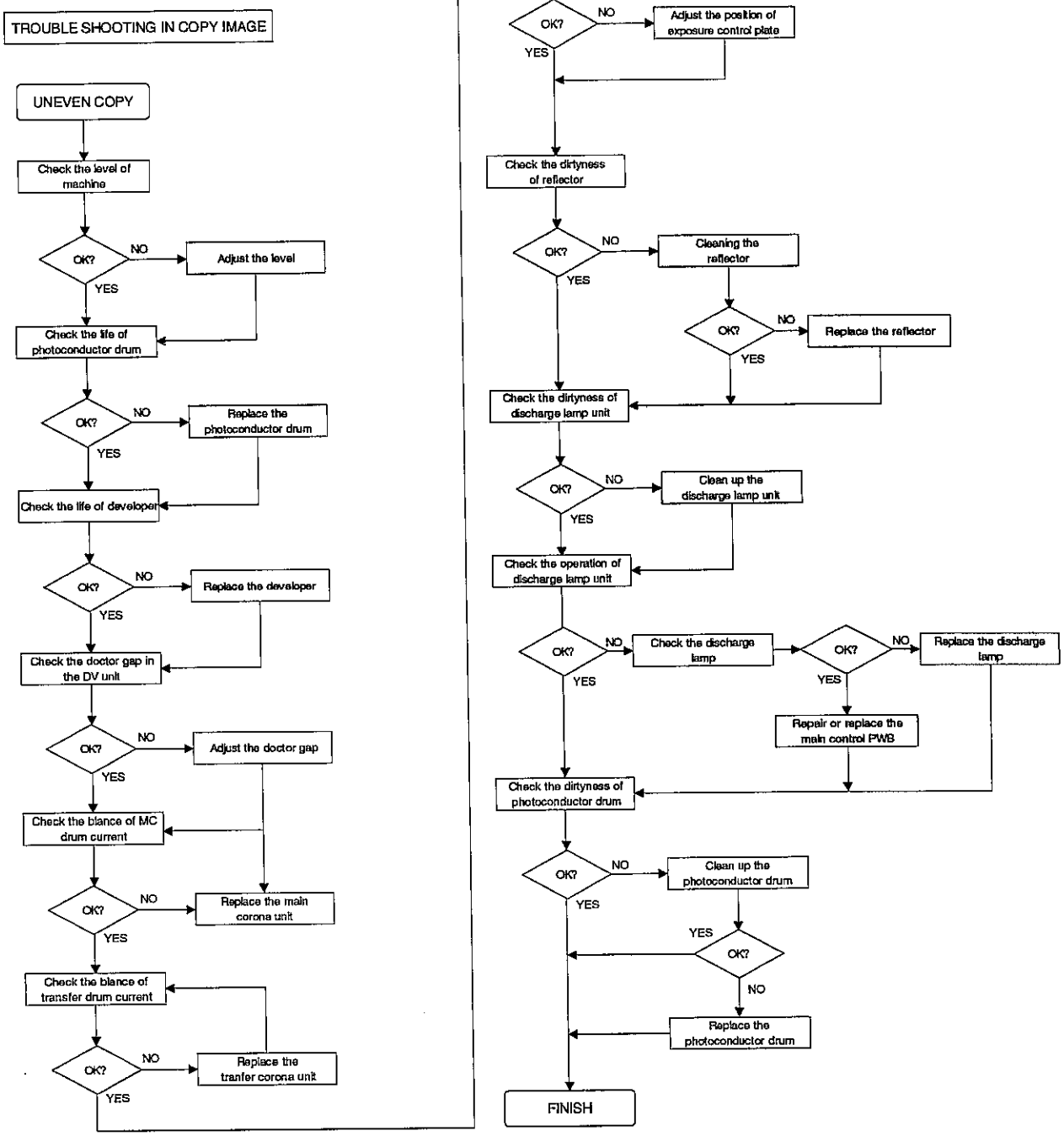
| Main code | Section | Sub code | Description | |
|---|---|---|---|---|
| F2 | Paper tray 3 | 33 | | 2) Paper tray lower limit sensor defect<br>3) Paper tray motor defect<br>4) Paper tray mechanism defect<br>5) Main control PWB defect |
| | | | Remedy | 1) Check the paper tray operation with TC6-3.<br>2) Clear the self diag display with TC15. |
| CH | Cabinet SW | Light | Content | The cabinet open/close SW is not closed. |
| | | | Details | 1) The cabinet open/close SW ON is not detected. |
| | | | Cause | 1) Cabinet open/close SW is not closed.<br>2) Cabinet open/close SW defect<br>3) Main control PWB defect<br>4) DC power defect (Fuse F709)<br>5) Paper tray is not closed. |
| | | | Remedy | When the trouble is cancelled, the self diag is automatically cancelled. |
| | | Blink | Content | Developer unit not detected |
| | | | Details | 1) The developer unit is not detected. |
| | | | Cause | 1) The developer unit is not installed.<br>2) Developer unit connector defect<br>3) Main control PWB defect |
| | | | Remedy | When the trouble is cancelled, the self diag is automatically cancelled. |
| PC | AUditor<br>Personal counter | | Content | Card type counter card not inserted/personal counter not inserted |
| | | | Details | 1) The card of the card type counter is not detected.<br>2) The personal counter is not detected. |
| | | | Cause | 1) The card counter (SF-EA11) is not inserted.<br>2) The card counter (SF-EA11) is not inserted though TC26-3 is set to the card counter mode.<br>3) Card counter (SF-EA11) defect<br>4) Personal counter not inserted<br>5) Personal counter defect<br>6) Main control PWB defect |
| | | | Remedy | When the trouble is cancelled, the self diag is automatically cancelled. |
| The copier does not go into the ready state. | Auditor<br>Personal counter | | Content | Card counter not inserted/personal counter not inserted |
| | | | Details | 1) The card counter is not detected.<br>2) The personal counter is not detected. |
| | | | Cause | 1) The card counter (SF-EA11) is not inserted.<br>2) The card counter (SF-EA11) is not inserted though TC26-3 is set to the card counter mode.<br>3) Card counter (SF-EX11) defect<br>4) Personal counter not inserted<br>5) Personal counter defect<br>6) Main control PWB defect |
| | | | Remedy | When the trouble is cancelled, the self diag is automatically cancelled. |
| PF | | | Content | Copy inhibition command is issued from the host computer. |
| | | | Details | |
| | | | Cause | 1) Copy inhibition command is issued from the host computer.<br>2) Main control PWB defect |
| | | | Remedy | 1) Contact the host computer to cancel the copy inhibition command.<br>2) Set TC27-1 to ignore the copy inhibition command from the host computer. |

# [10] TROUBLESHOOTING

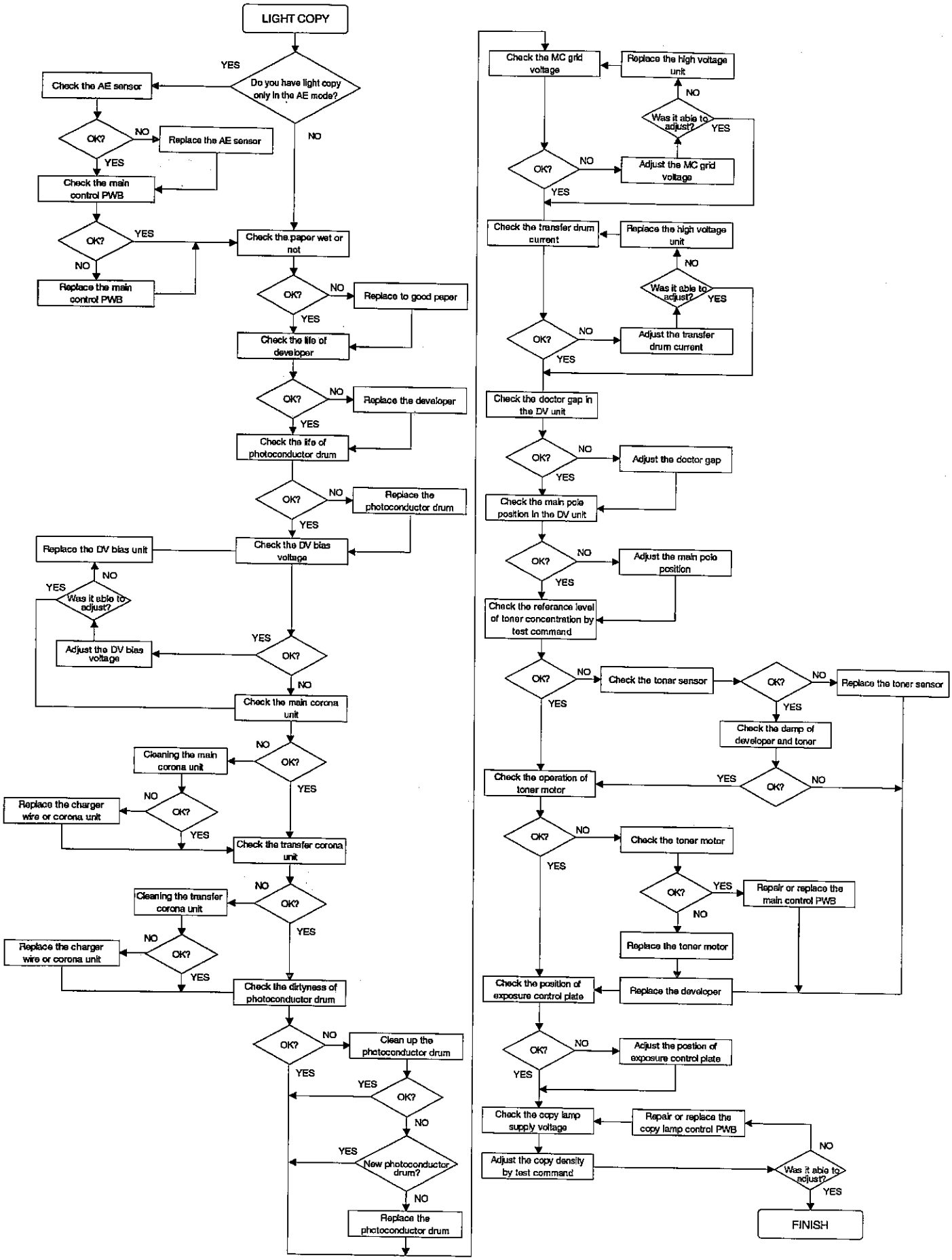
## 1. Troubleshooting on copy quality

When the following symptoms occur, repair according to the troubleshoot flowchart.

1) Uneven density
2) Insufficient density
3) Dirt (Background)
4) White spot
5) Black spot
6) Unclear stripe
7) Clear stripe



TROUBLE SHOOTING IN COPY IMAGE



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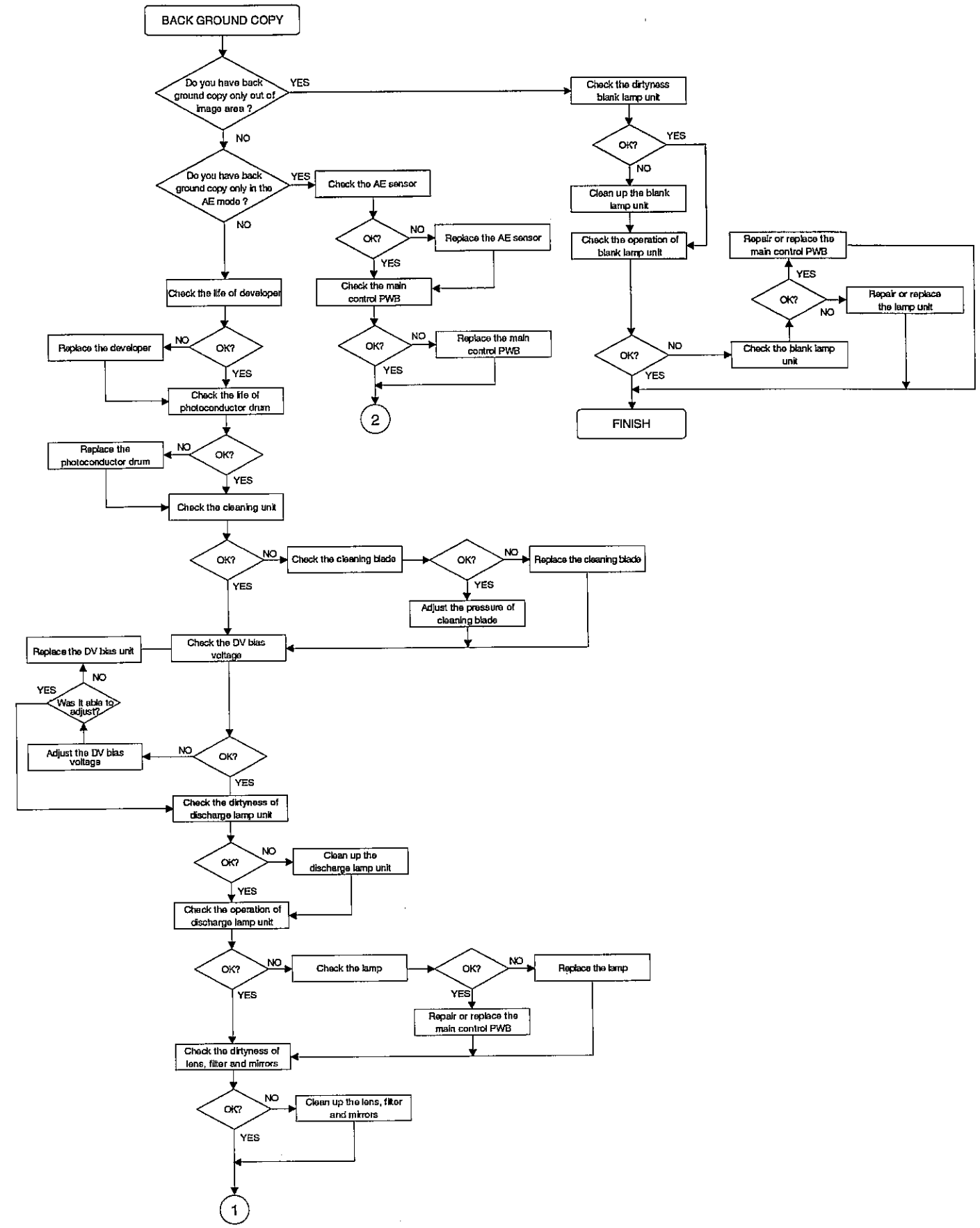
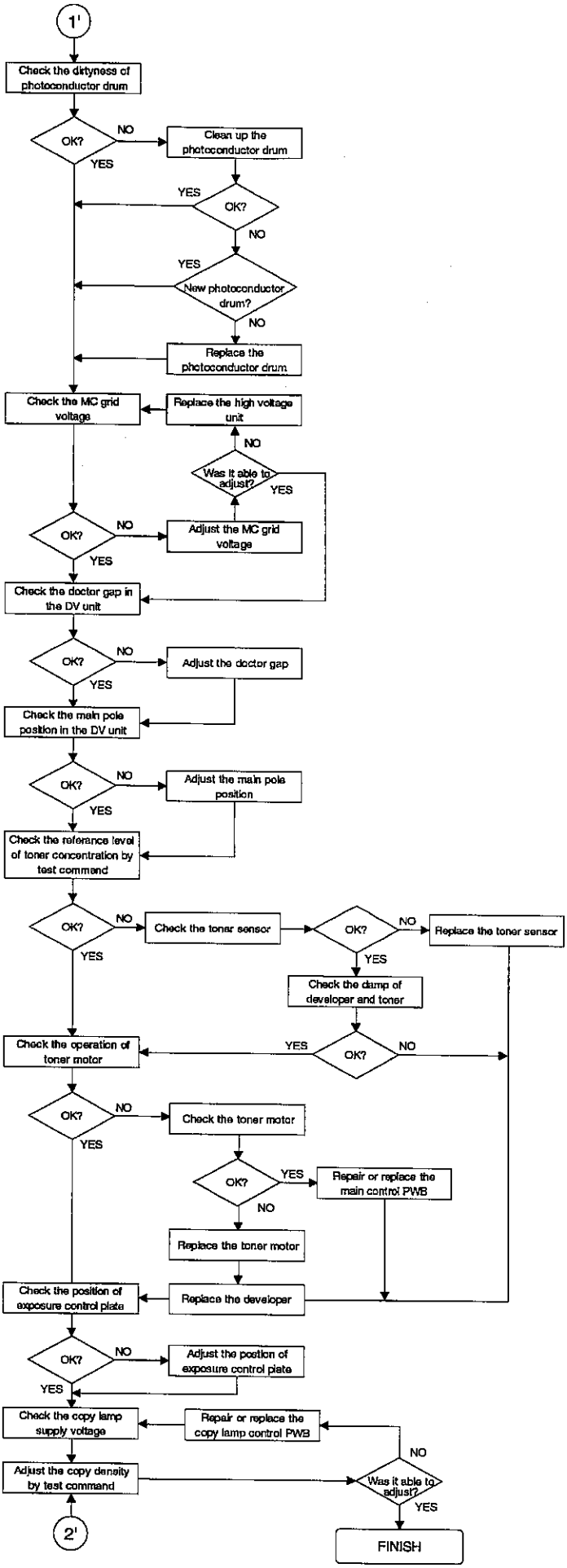
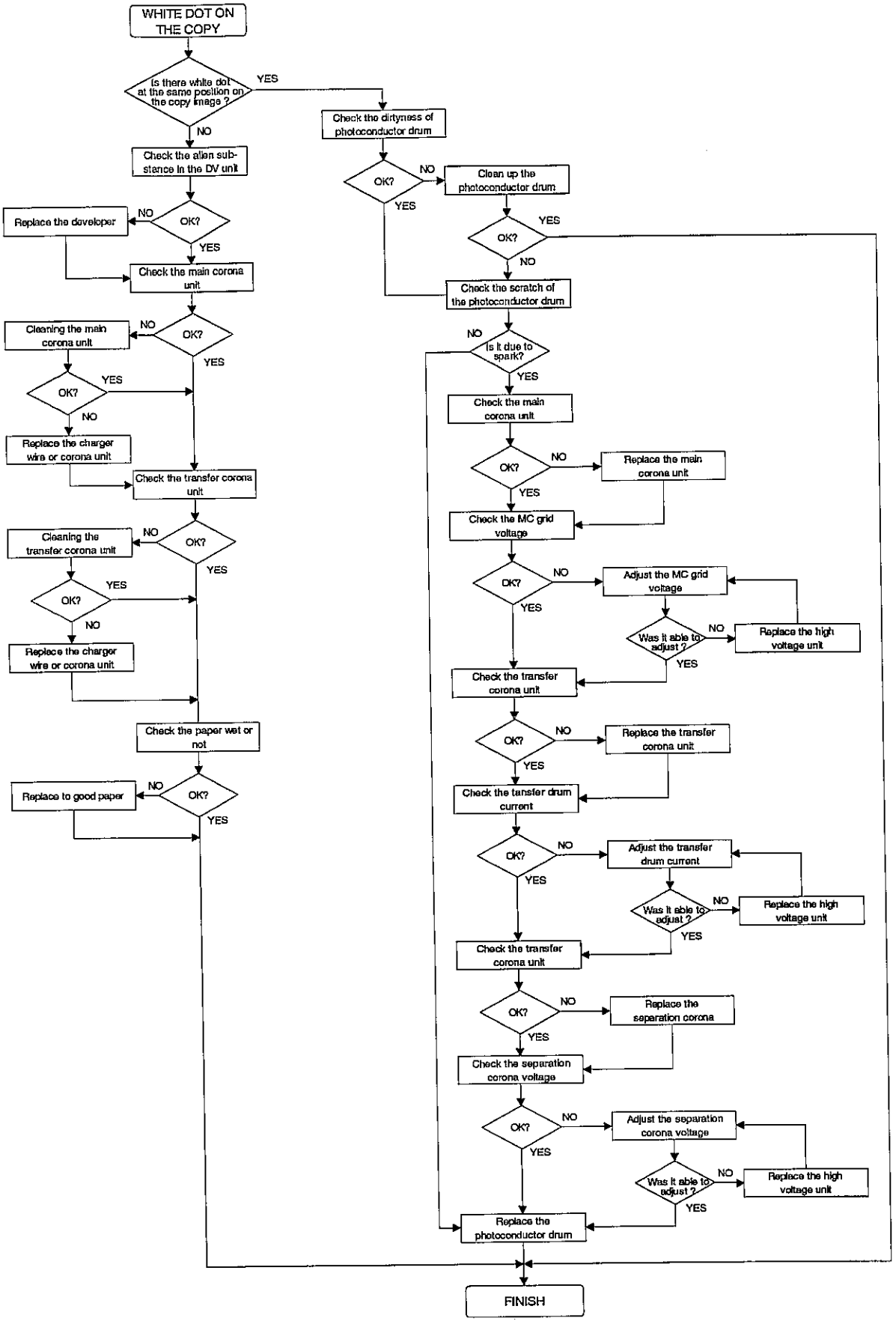
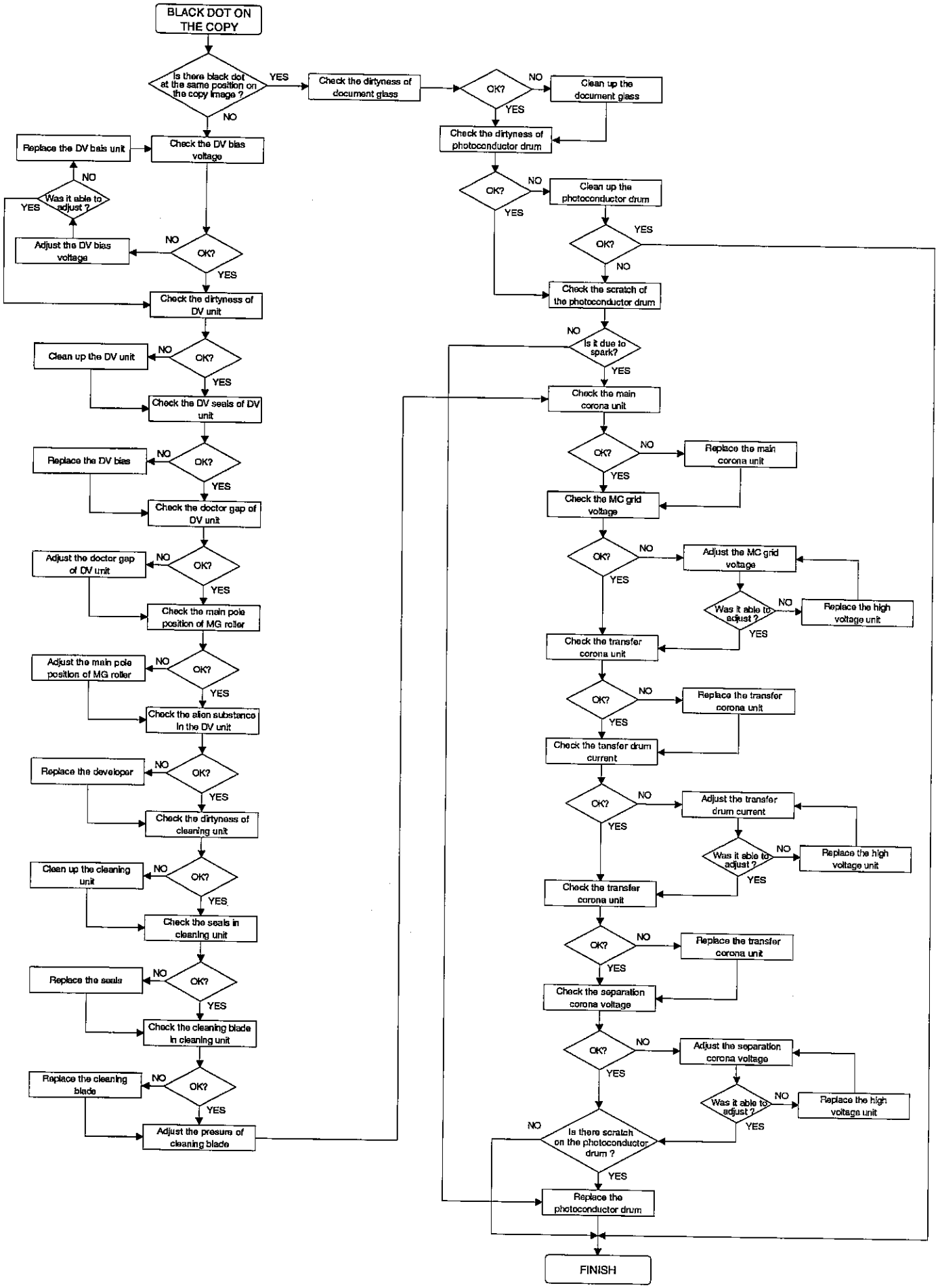
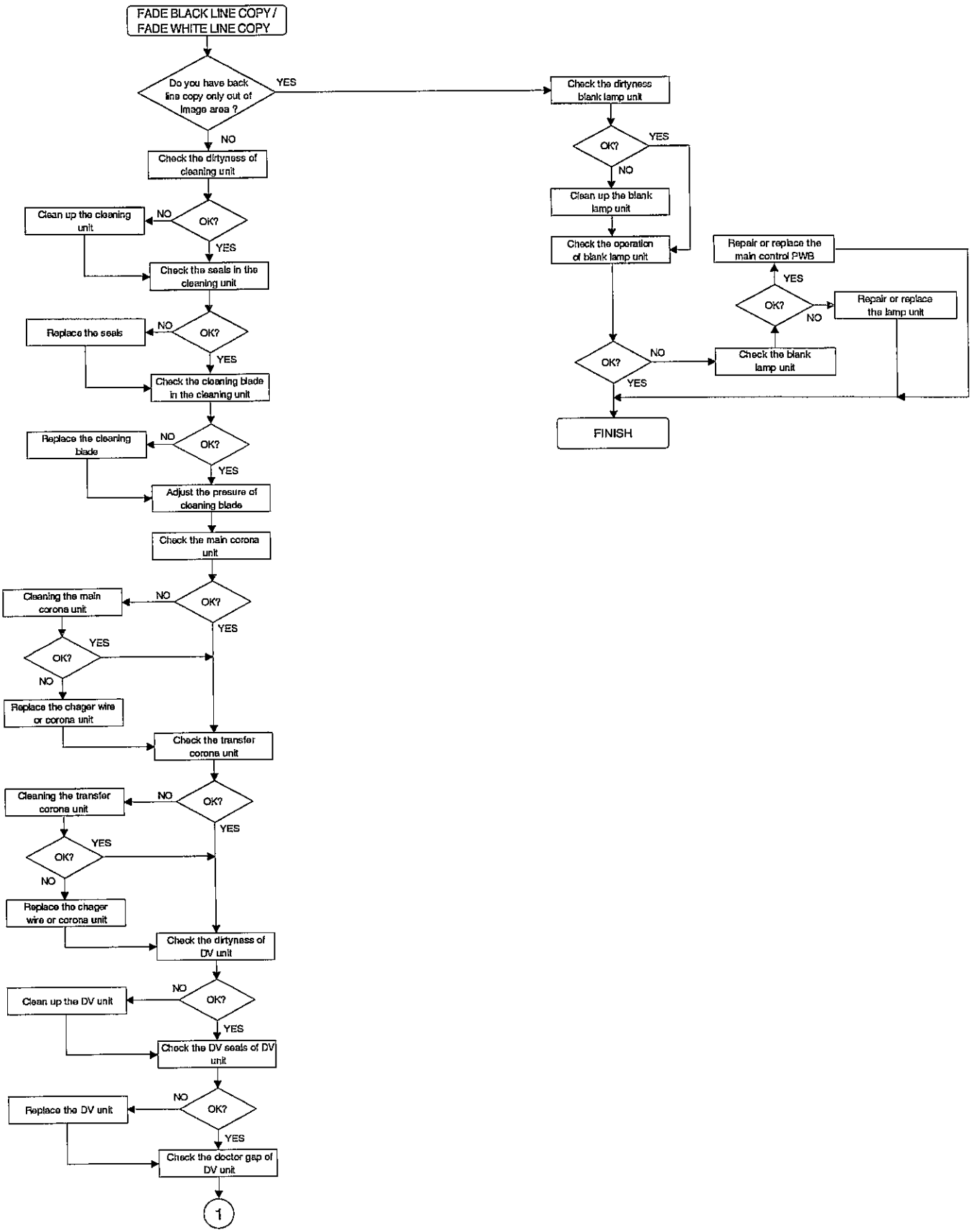


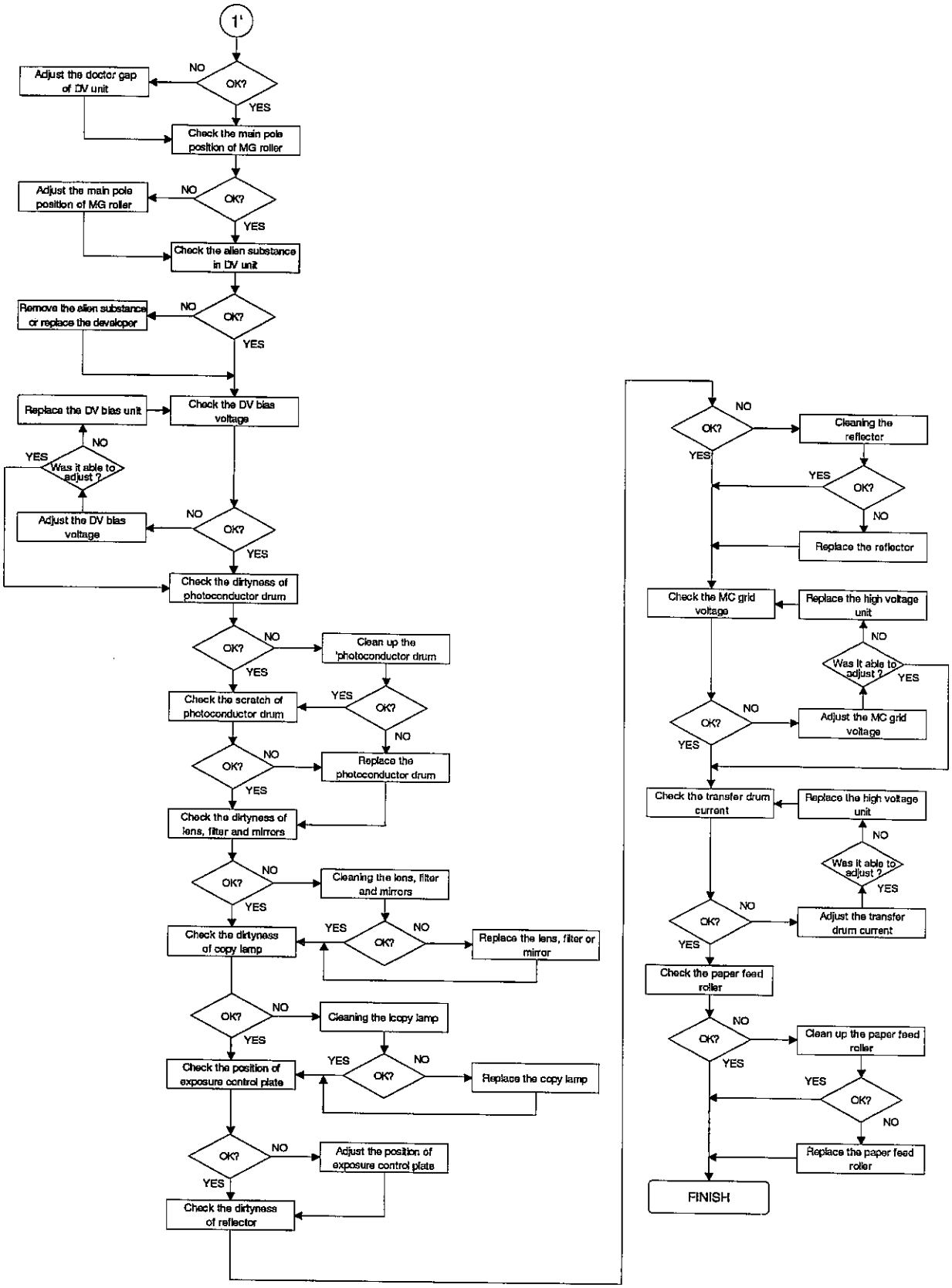

1'
Check the dirtyness of photoconductor drum
OK?
NO
YES
Clean up the photoconductor drum
YES
OK?
NO
YES
New photoconductor drum?
NO
Replace the photoconductor drum
Check the MC grid voltage
Replace the high voltage unit
NO
Was it able to adjust?
YES
OK?
NO
YES
Adjust the MC grid voltage
Check the doctor gap in the DV unit
OK?
NO
YES
Adjust the doctor gap
Check the main pole position in the DV unit
OK?
NO
YES
Adjust the main pole position
Check the reference level of toner concentration by test command
OK?
NO
YES
Check the toner sensor
OK?
NO
YES
Replace the toner sensor
Check the damp of developer and toner
Check the operation of toner motor
YES
OK?
NO
OK?
NO
YES
Check the toner motor
OK?
YES
NO
Repair or replace the main control PWB
Replace the toner motor
Check the position of exposure control plate
Replace the developer
OK?
NO
YES
Adjust the position of exposure control plate
Check the copy lamp supply voltage
Repair or replace the copy lamp control PWB
Adjust the copy density by test command
NO
Was it able to adjust?
YES
FINISH
2'


WHITE DOT ON THE COPY
Is there white dot at the same position on the copy image ?
YES
NO
Check the dirtyness of photoconductor drum
Check the alien sub-stance in the DV unit
OK?
NO
YES
Clean up the photoconductor drum
Replace the developer
Check the main corona unit
Check the scratch of the photoconductor drum
Cleaning the main corona unit
Is it due to spark?
Replace the charger wire or corona unit
Check the transfer corona unit
Replace the main corona unit
Check the MC grid voltage
Cleaning the transfer corona unit
Adjust the MC grid voltage
Was it able to adjust ?
Replace the high voltage unit
Check the transfer corona unit
Check the paper wet or not
Replace the transfer corona unit
Replace to good paper
Check the tansfer drum current
Adjust the transfer drum current
Check the separation corona voltage
Adjust the separation corona voltage
Replace the photoconductor drum
FINISH

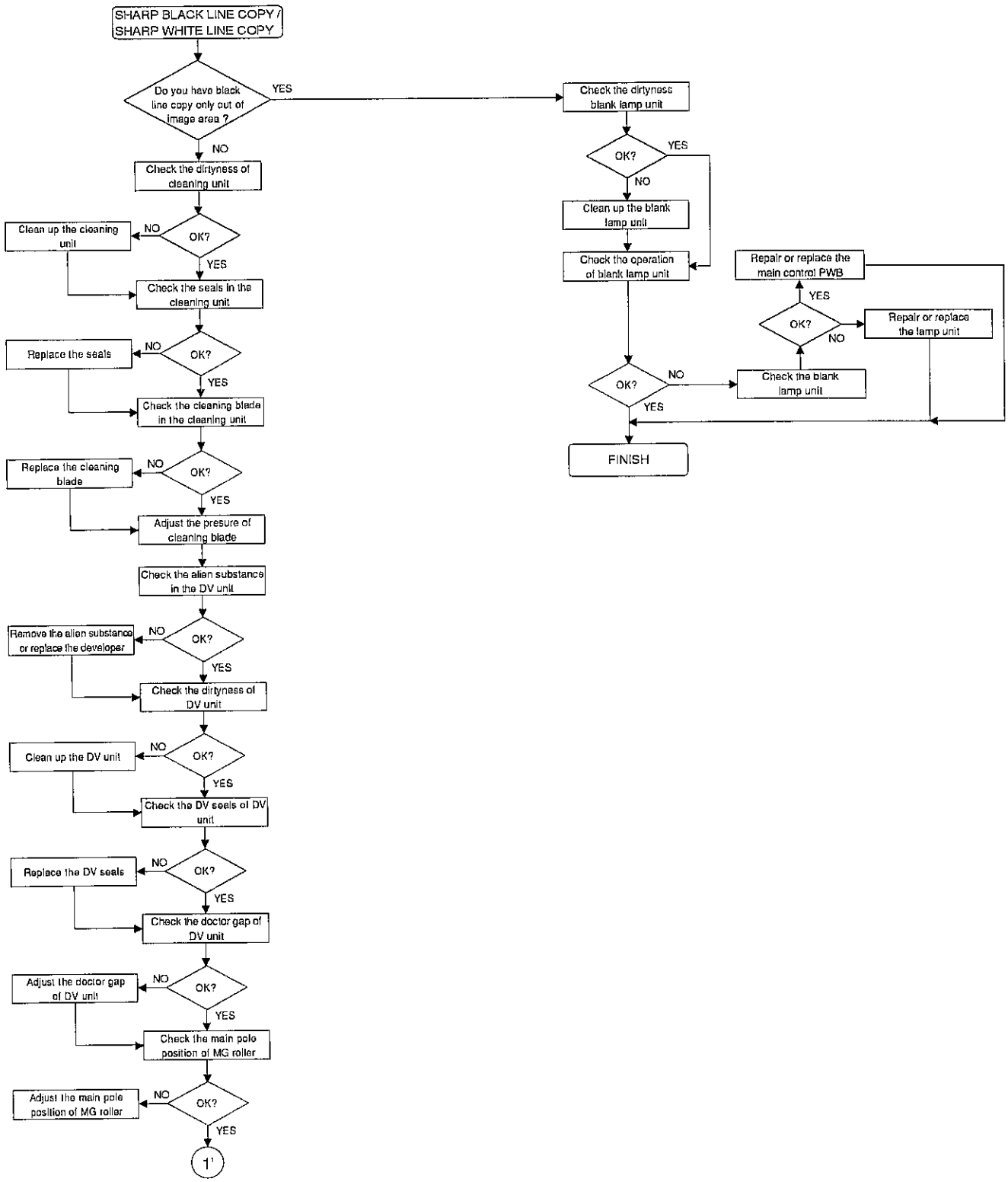

BLACK DOT ON THE COPY
Is there black dot at the same position on the copy image ?
YES
NO
Check the dirtyness of document glass
OK?
NO
YES
Clean up the document glass
Check the dirtyness of photoconductor drum
OK?
NO
YES
Clean up the photoconductor drum
OK?
YES
NO
Check the scratch of the photoconductor drum
Is it due to spark?
NO
YES
Check the main corona unit
OK?
NO
YES
Replace the main corona unit
Check the MC grid voltage
OK?
NO
YES
Adjust the MC grid voltage
Was it able to adjust ?
NO
YES
Replace the high voltage unit
Check the transfer corona unit
OK?
NO
YES
Replace the transfer corona unit
Check the tansfer drum current
OK?
NO
YES
Adjust the transfer drum current
Was it able to adjust ?
NO
YES
Replace the high voltage unit
Check the transfer corona unit
OK?
NO
YES
Replace the transfer corona unit
Check the separation corona voltage
OK?
NO
YES
Adjust the separation corona voltage
Was it able to adjust ?
NO
YES
Replace the high voltage unit
Is there scratch on the photoconductor drum ?
NO
YES
Replace the photoconductor drum
FINISH
Replace the DV bais unit
Check the DV bias voltage
Was it able to adjust ?
NO
YES
Adjust the DV bias voltage
OK?
NO
YES
Check the dirtyness of DV unit
Clean up the DV unit
OK?
NO
YES
Check the DV seals of DV unit
Replace the DV bias
OK?
NO
YES
Check the doctor gap of DV unit
Adjust the doctor gap of DV unit
OK?
NO
YES
Check the main pole position of MG roller
Adjust the main pole position of MG roller
OK?
NO
YES
Check the alien substance in the DV unit
Replace the developer
OK?
NO
YES
Check the dirtyness of cleaning unit
Clean up the cleaning unit
OK?
NO
YES
Check the seals in cleaning unit
Replace the seals
OK?
NO
YES
Check the cleaning blade in cleaning unit
Replace the cleaning blade
OK?
NO
YES
Adjust the presure of cleaning blade

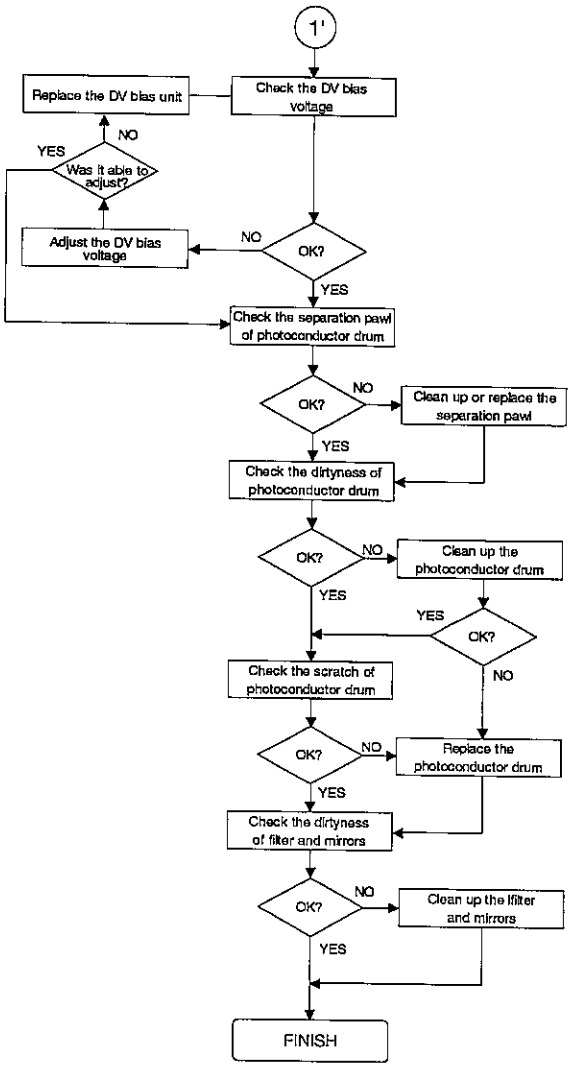
TROUBLE SHOOTING IN COPY IMAGE




1'
Adjust the doctor gap of DV unit
NO
OK?
YES
Check the main pole position of MG roller
Adjust the main pole position of MG roller
NO
OK?
YES
Check the alien substance in DV unit
Remove the alien substance or replace the developer
NO
OK?
YES
Replace the DV bias unit
Check the DV bias voltage
NO
YES
Was it able to adjust ?
Adjust the DV bias voltage
NO
OK?
YES
Check the dirtyness of photoconductor drum
OK?
NO
Clean up the photoconductor drum
YES
Check the scratch of photoconductor drum
YES
OK?
NO
OK?
NO
Replace the photoconductor drum
YES
Check the dirtyness of lens, filter and mirrors
OK?
NO
Cleaning the lens, filter and mirrors
YES
Check the dirtyness of copy lamp
YES
OK?
NO
Replace the lens, filter or mirror
OK?
NO
Cleaning the lcopy lamp
YES
Check the position of exposure control plate
YES
OK?
NO
Replace the copy lamp
OK?
NO
Adjust the position of exposure control plate
YES
Check the dirtyness of reflector
NO
OK?
YES
Cleaning the reflector
YES
OK?
NO
Replace the reflector
Check the MC grid voltage
Replace the high voltage unit
NO
Was it able to adjust ?
YES
OK?
NO
Adjust the MC grid voltage
YES
Check the transfer drum current
Replace the high voltage unit
NO
Was it able to adjust ?
YES
OK?
NO
Adjust the transfer drum current
YES
Check the paper feed roller
OK?
NO
Clean up the paper feed roller
YES
YES
OK?
NO
Replace the paper feed roller
FINISH

TROUBLE SHOOTING IN COPY IMAGE

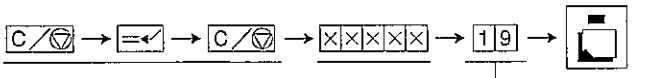



1'
Check the DV bias voltage
Replace the DV bias unit
NO
YES
Was it able to adjust?
OK?
NO
Adjust the DV bias voltage
YES
Check the separation pawl of photoconductor drum
OK?
NO
Clean up or replace the separation pawl
YES
Check the dirtyness of photoconductor drum
OK?
NO
Clean up the photoconductor drum
YES
YES
OK?
NO
Check the scratch of photoconductor drum
OK?
NO
Replace the photoconductor drum
YES
Check the dirtyness of filter and mirrors
OK?
NO
Clean up the filter and mirrors
YES
FINISH

# [11] Key operator program

(Initial setting)
The key operator code is set to "00000" when shipping from the factory.

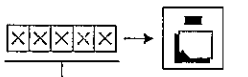
(Recording procedure)




(Key operator program start) (Current set code) (Program No.) (Execution)

(Program No.)

(Key operator program start) (Current set code) (Program No.) (Execution)




(New code registration) (Execution)

(New code registration) (Execution)

## Program list

| Code No. | Program name | Function |
|---|---|---|
| ⁎⁎P10 | Department control counter setting/cancel | Used to set or cancel the department control counter. |
| ⁎⁎P11 | Total of copies made | Used to print (⁎) or display the total copy quantity of each department. |
| ⁎⁎P12 | Total of money amount | Used to print (⁎) or display the total money amount of each department. |
| ⁎⁎P13 | Total clear | Used to clear the total of each department. |
| ⁎⁎P14 | Department No. control (registration, clear, change, print) | Used to register, clear, and change the department number, and to print (⁎) the recorded department numbers. |
| ⁎⁎P15 | Setting the unit price of copy | Used to set the three kinds of copy unit prices. |
| ⁎⁎P16 | Setting/cancel of the upper limit of copy quantity | Used to set or cancel the max. allowable copy quantity for each department. |
| P17 | Machine No. setting | Used to register and print (⁎) the copy machine ID number. |
| ⁎⁎P18 | Warning to an erroneous input of the department No. | When the department number is erroneously inputted three times continuously, the warming display is shown. (To prevent against use in an improper department number.) |
| P19 | Key operator code No. change | Used to change the key operator code number. |
| P20 | Auto copy density level adjustment | Used to adjust the copy density in the auto density adjustment mode. |
| P21 | Power save mode time setting | Used to set the auto shut off time after the power is turned on. (Adjustable in the range of 10 min to 24 min) |
| P22 | Toner save mode setting | Used to save the toner consumption. |
| P23 | Auto clear time setting | Used to set the automatic resetting to the standard state after completion of copying. (Adjustable in the range of 10 sec to 240 sec.) |
| P24 | Fixed magnification ratio setting | Used to add or change the fixed magnification ratios. (Setting can be made either in the enlargement or in the reduction copy.) |
| P25 | Setting the upper limit of copies selected quantity | Used to set the upper limit of copy set quantity (copy quantity/copy set quantity). |
| P26 | Binding margin setting | Used to change the binding margin. |
| P27 | Edge erase/center erase width setting | Used to change the edge erase/center erase width. |
| P28 | Standard state setting | Used to set the state (standard state) when the power is turned on. |
| P29 | Recall of total No. of papers used | Used to print (⁎) or display the total usage counts of each of the copier, the RADF (duplex document recirculation unit), the duplex tray, and the stapler. |
| P42 | Selection of binding direction change function | Used to change the binding direction. |
| P43 | Edge erase mode initial setting | Used to set the mode when edge erase is selected. |
| P44 | Inhibition of recall of the set page of recorded index paper insertion setting | Used to inhibit the set page in the index paper insertion mode. |
| P45 | Message display time setting | Used to set the message display time. |
| P46 | Operation inhibit mode setting | Used to inhibit the operation start of the copier except by the specified operator. |
| P47 | SDF thin original feed mode setting | Used to set the SDF thin paper mode when the thin original is copied on the manual original set table (SDF) to prevent damages on the original during original transport. |
| P70 | Inhibition of automatic paper selection | Used to inhibit the paper auto selection function. |
| P71 | Inhibition of automatic selection of trays 1, 2, 3 | Used to inhibit the continuous selection (paper feed) when papers of the same size are set on trays 1, 2, and 3. (Useful when papers of different weight are set in different trays. ) |
| P72 | Inhibition of use of the manual feed tray in the duplex copying | Used to inhibit the manual paper feed in the duplex copying. |
| P73 | Inhibition of rewriting the registered conditions | Used to inhibit changing of the copy conditions and erase and rewrite registered by the copy conditions registering function. |
| P74 | Inhibition of use of the recirculation system document feeder (UDH) | Used to inhibit the use of the UDH in case of breakdown. |
| P75 | Inhibition of the duplex copying | Used to inhibit the use of the duplex unit in case of breakdown. |
| P76 | Inhibition of the staple function | |
| P77 | Inhibition of cover paper/index paper insert copy | Used to inhibit the cover paper index paper insertion copying. |
| P78 | Inhibition of drawing of the trays | Used to inhibit drawing of the tray in case of paper supply and misfeed treatment. |
| P83 | Enabling the PC/Modem access | Used to allow access to the key operator program without key operator code input. (Useful when the copier is connected with a computer directly or through the telephone line.) |
| P90 | Program list display | Used to display all the key operator programs on the program message display. |
| P92 | Program list print | Used to print (⁎) the all key operator programs list. |

⁎: To print, the optional commander (SF-EA13) is required.
⁎⁎: When the SF-EA11 (option) is installed, it cannot be set.

# [12] APPENDIX

## SD-3062 Test Command Adjustment/Setting values List

### Adjustment

| Purpose | Section | Main code | Sub code | Content | Current set value | Standard set value | Default | Set range | Adjustment value | Ref. page |
|---|---|---|---|---|---|---|---|---|---|---|
| Adjustment | Paper feed | 26 | 8 | The adjustment value of the copy paper tray shift up amount. | | | | | | |
| | | | | Tray 1 | | 12 | 12 | 1 ~ 30 | | |
| | | | | Tray 2 | | 12 | 12 | 1 ~ 30 | | |
| | | | | Tray 3 | | 12 | 12 | 1 ~ 30 | | |
| | | 51 | 2 | The adjustment value of the contact pressure of copy paper on the resist roller in each paper feed mode. | | | | | | |
| | | | | 51A: The adjustment value of time interval from the transport roller clutch (TRC2) ON to the resist roller (RRC) ON (in the manual feed mode) | | 35 | 15 | 0 ~ 50 | | |
| | | | | 51B: The adjustment value of time interval from the transport roller clutch (TRC2) ON to the resist roller (RRC) ON (in the paper feed tray 1 paper feed mode) | 22 | 15 | 0 ~ 50 | | | |
| | | | | 51C: The adjustment value of time interval from the transport roller clutch (TRC2) ON to the resist roller (RRC) ON (in the paper feed tray 2 paper feed mode) | | 22 | 15 | 0 ~ 50 | | |
| | | | | 51D: The adjustment value of time interval from the transport roller clutch (TRC2) ON to the resist roller (RRC) ON (in the paper feed tray 3 paper feed mode) | | 22 | 15 | 0 ~ 50 | | |
| | | | | 51E: The adjustment value of time interval from the transport roller clutch (TRC2) ON to the resist roller (RRC) ON (in the duplex tray paper feed mode) | | 22 | 15 | 0 ~ 50 | | |
| | | | 3 | The adjustment value of the contact pressure of copy paper on the resist roller in each paper feed mode. (The same as TC51-2, but without copying.) | | | | | | |
| | | | | 51A: The adjustment value of time interval from the transport roller clutch (TRC2) ON to the resist roller (RRC) ON (in the manual paper feed mode) | | 35 | 15 | 0 ~ 50 | | |
| | | | | 51B: The adjustment value of time interval from the transport roller clutch (TRC2) ON to the resist roller (RRC) ON (in the paper feed tray 1 paper feed mode) | | 22 | 15 | 0 ~ 50 | | |
| | | | | 51C: The adjustment value of time interval from the transport roller clutch (TRC2) ON to the resist roller (RRC) ON (in the paper feed tray 2 paper feed mode) | | 22 | 15 | 0 ~ 50 | | |
| | | | | 51D: The adjustment value of time interval from the transport roller clutch (TRC2) ON to the resist roller (RRC) ON (in the paper feed tray 3 paper feed mode) | | 22 | 15 | 0 ~ 50 | | |
| | | | | 51E: The adjustment value of time interval from the transport roller clutch (TRC2) ON to the resist roller (RRC) ON (in the duplex tray paper feed mode) | | 22 | 15 | 0 ~ 50 | | |
| | | | 4 | The adjustment value of time interval from detection of copy paper lead edge by PPD3 to the transport roller clutch (TRC2/TRC1) ON. The copy paper is stopped before making contact with the resist roller, and this stop position is adjusted. | | 25 | 25 | 0 ~ 50 | | |
| | Paper transport | | 1 | The adjustment value of the photoconductor drum separation pawl ON timing | | 8 | 8 | 0 ~ 20 | | |
| | Optical | 48 | 1 | Adjustment of vertical copy magnification ratio and the adjustment value of focus. | | | | | | |
| | | | | 48A: The focus adjustment value in the reduction copy (No. 4/5 mirror moving rate in the reduction copy) | | 26 | 26 | 1 ~ 51 | | |
| | | | | 48B: The focus adjustment value in the normal copy (No. 4/5 mirror home position) | | 50 | 50 | 1 ~ 99 | | |
| | | | | 48C: The copy magnification ratio adjustment value in the reduction copy (the lens moving rate in the reduction copy) | | 26 | 26 | 1 ~ 51 | | |
| | | | | 48D: The copy magnification ratio adjustment value in the normal copy (the lens home position) | | 60 | 60 | 1 ~ 119 | | |
| | | | | 48E: The focus adjustment value in the enlargement copy (No. 4/5 mirror moving rate) | | 16 | 16 | 1 ~ 51 | | |
| | | | | 48F: The copy magnification ratio adjustment value in the enlargement copy (the lens moving rate in the enlargement copy) | | 26 | 26 | 1 ~ 30 | | |
| | | | 2 | The horizontal (paper transport direction) copy magnification ratio adjustment value | | 15 | 15 | 1 ~ 30 | | |

| Purpose | Section | Main code | Sub code | Content | Current set value | Standard set value | Default | Set range | Adjustment value | Ref. page |
|---|---|---|---|---|---|---|---|---|---|---|
| | Optical | | 3 | The focus adjustment value (The same as TC48-1, 48A ~ 48C, but without copying.) | | 26 | 26 | 1 ~ 51 | | |
| | | | | 48A: The focus adjustment value in the reduction copy (No. 4/5 mirror moving rate). | | | | | | |
| | | | | 48B: The focus adjustment value in the normal copy (No. 4/5 mirror home position. | | 50 | 50 | 1 ~ 99 | | |
| | | | | 48C: The copy magnification ratio adjustment value in the reduction copy (The lens moving rate in the reduction copy). | | 16 | 16 | 1 ~ 51 | | |
| | | | 4 | The vertical copy magnification ratio adjustment value (The same as TC48-1, 48D ~ 48F, but without copying.) | | 26 | 26 | 1 ~ 51 | | |
| | | | | 48A: The copy magnification ratio adjustment value in the reduction copy (The lens home position in the reduction copy). | | | | | | |
| | | | | 48B: The copy magnification ratio adjustment value in the normal copy (Lens home position) | | 50 | 50 | 1 ~ 99 | | |
| | | | | 48C: The copy magnification ratio adjustment value in the enlargement copy (Lens moving rate in the enlargement copy) | | 26 | 26 | 1 ~ 51 | | |
| | | | 5 | Horizontal (paper transport direction) copy magnification ratio adjustment value (the same as TC48-2, but without copying.) | | 15 | 15 | 1 ~ 30 | | |
| | | 50 | 1 | The adjustment value of the copy image position and the void area (image loss) on the copy paper | | | | | | |
| | | | | 50A: The set value to coincide the image lead edge on the original and with the image lead edge on the photoconductor drum. | | 50 | 0 | 0 ~ 99 | | |
| | | | | 50B: The set value to adjust the image position on the photoconductor and the copy paper. | | 50 | 0 | 0 ~ 99 | | |
| | | | | 50C: The set value to adjust braking time of the resist roller. | | 10 | 10 | 1 ~ 20 | | |
| | | | | 50D: The set value to adjust the void area at the lead edge of the copy paper. | | 10 | 10 | 0 ~ 20 | | |
| | | | 2 | The adjustment value of the copy image position and the void area (image loss) on the copy paper (The same as TC50-1, but without copying.) | | | 0 | 0 ~ 999 | | |
| | | | | 50A: The distance from the copy paper lead edge to the image lead edge in the 200% copy. | | | | | | |
| | | | | 50B: The distance from the copy paper lead edge to the image lead edge in the 100% copy. | | | 0 | 0 ~ 999 | | |
| | | | | 50C: The set value to adjust the braking time of the resist roller. | | 10 | 10 | 0 ~ 20 | | |
| | | | | 50D: The set value to adjust the void area amount at the copy paper lead edge. | | 10 | 10 | 0 ~ 20 | | |
| | | | 3 | The adjustment value of the copy image position and the void area (image loss) on the copy paper (The same as TC50-1, but without copying.) | | 50 | 0 | 0 ~ 99 | | |
| | | | | 50A: The set value to coincide the image lead edge on the original and with the image lead edge on the photoconductor drum. | | | | | | |
| | | | | 50B: The set value to adjust the image position on the photoconductor and the copy paper. | | 50 | 0 | 0 ~ 99 | | |
| | | | | 50C: The set value to adjust braking time of the resist roller. | | 10 | 10 | 1 ~ 20 | | |
| | | | | 50D: The set value to adjust the void area at the lead edge of the copy paper. | | 10 | 10 | 0 ~ 20 | | |
| | | | 4 | The adjustment value of the void area on the copy paper, (The same as TC50-1, 50D, but without copying.) | | 10 | 10 | 0 ~ 20 | | |
| | Process | 8 | 2 | The main charger grid voltage adjustment value in the manual and the auto copy modes. | | | 380 | 137 ~ 510 | –750V | |
| | | | 3 | The main charger grid voltage adjustment value in the photo copy mode. | | | 250 | 137 ~ 510 | –590V (1)<br>–490V (EX) | |
| | | | 4 | The main charger grid voltage adjustment value in the toner save copy mode. | | | 330 | 137 ~ 510 | –700V (1)<br>–645V (EX) | |
| | | | 5 | Discharge charger current adjustment value | | | | | 15±3μA | |
| | | | 6 | Transfer charger current adjustment value | | | 35 | 3 ~ 56 | –55±3μA | |
| | | | 7 | Separation charger current adjustment value | | | 28 | 18 ~ 56 | 320±20V | |

| Purpose | Section | Main code | Sub code | Content | Current set value | Standard set value | Default | Set range | Adjustment value | Ref. page |
|---|---|---|---|---|---|---|---|---|---|---|
| | Process | 44 | 2 | Photoconductor drum mark sensor sensitivity adjustment | | | | | 123 ~ 233 | |
| | | | 3 | Image density sensor sensitivity adjustment | | | | | 668 ~ 998 | |
| | Developer | 8 | 1 | Developing bias voltage adjustment value | | | 30 | 3 ~ 56 | −200±5V | |
| | | 25 | 2 | Initial setting of toner density when replacing the developer | | 128 | 128 | 0 ~ 255 | | |
| | RDH | 53 | 1 | The original switchback amount adjustment value in switchback operation in the RDH single face mode. | | 16 | 16 | 0 ~ 31 | | |
| | | | 2 | The original stop position adjustment value in non-switchback operation (the thin paper mode) in the RDH single face mode. | | 16 | 16 | 0 ~ 31 | | |
| | | | 3 | The switchback amount adjustment value in switchback operation in the RDH duplex mode. | | 16 | 16 | 0 ~ 31 | | |
| | Duplex | 52 | 1 | The stop position adjustment value of the width alignment plate of the paper tray in the duplex unit. | | 40 | 50 | 0 ~ 9 | | |
| | | | 2 | The stop position adjustment value of the length alignment plate of the paper tray in the duplex unit. | | 40 | 50 | 0 ~ 99 | | |
| | Finisher | 54 | 1 | The adjustment value of stacking ability of the finisher<br>The adjustment is performed by changing the tilt angle of the tray. | | 50 | 50 | 0 ~ 99 | | |
| | | | 2 | The adjustment value of stacking ability of the finisher<br>The adjustment is performed by changing the paper kicker position for the copy paper on the tray. | | 20 | 20 | 0 ~ 99 | | |

## Setting

| Purpose | Section | Main code | Sub code | Content | Current set value | Standard set value | Default | Set range | Adjustment value | Ref. page |
|---|---|---|---|---|---|---|---|---|---|---|
| Setting | Paper feed | 26 | 2 | Paper tray 1 paper size setting | | | 1 | 1 ~ 3 | | |
| | Process | 26 | 7 | Photoconductor drum sensitivity setting | | | 2 | 1 ~ 3 | | |
| | | 44 | 1 | Main corona grid voltage correction, optical unit correction, setting of each operation of photoconductor drum correction. | | | 0 | 0 ~ 7 | | |
| | | | 4 | Setting of the standard main corona grid voltage (image density) in the correction of the main corona grid voltage.<br>This value should be set to "75." | | 75 | 75 | 75 | | |
| | Developer | 80 * | 2 | Used to check the toner density standard value set by simulation 25-2.<br>The toner density standard value can be set arbitrarily. | | | | | | |
| | Fuser | 43 | | Setting of the fusing temperature | | 3 | 3 | 1 ~ 5 | 200°C | |
| | Auditor | 26 | 3 | Setting of the auditor specification mode | | | 1 | 1 ~ 4 | | |
| | I/F | 27 | 1 | Setting to display the self diag (U7-00) when a communication trouble occurs with the host computer/MODEM and to inhibit copying. | | | 0 | 0 ~ 1 | | |
| | | | 2 | Setting of the host computer/MODEM number.<br>HOST1 MODEM1 | | | | | | |
| | | | | HOST1 MODEM2 | | | | | | |
| | | | | HOST1 MODEM3 | | | | | | |
| | | | | HOST1 MODEM4 | | | | | | |
| | | | | HOST2 MODEM1 | | | | | | |
| | | | | HOST2 MODEM2 | | | | | | |
| | | | | HOST2 MODEM3 | | | | | | |
| | | | | HOST2 MODEM4 | | | | | | |
| | | | | HOST3 MODEM1 | | | | | | |
| | | | | HOST3 MODEM2 | | | | | | |
| | | | | HOST3 MODEM3 | | | | | | |
| | | | | HOST3 MODEM4 | | | | | | |
| | | | | HOST1 MODEM1 | | | | | | |
| | | | | HOST4 MODEM1 | | | | | | |
| | | | | HOST4 MODEM2 | | | | | | |
| | | | | HOST4 MODEM3 | | | | | | |
| | | | | HOST4 MODEM4 | | | | | | |

| Purpose | Section | Main code | Sub code | Content | Current set value | Standard set value | Default | Set range | Adjustment value | Ref. page |
|---|---|---|---|---|---|---|---|---|---|---|
| | I/F | | 3 | Setting of the ID numbers of the copy machine and the host computer/MODEM. | | | | | | |
| | | | | HOST ID | | | | | | |
| | | | | COPIER ID | | | | | | |
| | | | 5 | The machine version is entered. | | | | | | |

## Copy density adjustment

| Purpose | Section | Main code | Sub code | Content | Current set value | Standard set value | Default | Set range | Adjustment value | Ref. page |
|---|---|---|---|---|---|---|---|---|---|---|
| Copy density adjustment | | 46 | 1 | The adjustment value of the copy density (exposure) and the coy density gradient (exposure gradient) in each copy mode. | | | | | | |
| | | | | Non-toner-save mode | | | | | | |
| | | | | Manual mode EXP1 | | 680 | 680 | 450 ~ 800 | | |
| | | | | Manual mode EXP5 | | 580 | 580 | 450 ~ 800 | | |
| | | | | Photo mode EXP1 | | 580 | 580 | 450 ~ 800 | | |
| | | | | Photo mode EXP5 | | 480 | 480 | 450 ~ 800 | | |
| | | | | Auto mode | | 610 | 610 | 450 ~ 800 | | |
| | | | | Toner save mode | | | | | | |
| | | | | Manual mode EXP1 | | 650 | 650 | 450 ~ 800 | | |
| | | | | Manual mode EXP5 | | 550 | 550 | 450 ~ 800 | | |
| | | | | Auto mode | | 580 | 580 | 450 ~ 800 | | |
| | | 47 | | Setting of the characteristics of the AE sensor and the optical section for the change in the copy lamp application voltage | | 130 ~252 | 0 | | | |

## Specifications

| Purpose | Section | Main code | Sub code | Content | Current set value | Standard set value | Default | Set range | Adjustment value | Ref. page |
|---|---|---|---|---|---|---|---|---|---|---|
| Setting | Option | 26 | 1 | Option setting | | 1 | 1 | 1 ~ 3 | | |
| | Destination | | 6 | Specification setting of destination | | | 1 | 1 ~ 3 | | |

## Counter

| Purpose | Section | Main code | Sub code | Content | Current set value | Standard set value | Default | Set range | Adjustment value | Ref. page |
|---|---|---|---|---|---|---|---|---|---|---|
| Setting | Maintenance cycle | 21 | 1 | Setting of the maintenance cycle | | | 3 | 1 ~ 3 | | |
| | Count mode (Maintenance/total) | 26 | 5 | Setting of the count mode of the total counter and the maintenance counter | | | 0 | 0 ~ 3 | | |
| | Total counter | 81 * | | Setting of the total counter to an arbitrary value | | | | | | |
| | Maintenance counter | 82 * | | Setting of the maintenance counter to an arbitrary value | | | | | | |
| | Developer counter | 85 * | | Setting of the developer counter to an arbitrary value | | | | | | |

## Memory data

| Purpose | Section | Main code | Sub code | Content | Current set value | Standard set value | Default | Set range | Adjustment value | Ref. page |
|---|---|---|---|---|---|---|---|---|---|---|
| Setting | Default | 80 * | 9 | All set values stored in the main PWB RAM are set to the default values. | | | | | | |
| Data transmission | SRAM → EEPROM | 92 | 1 | The data of the counters, the auditor, the test commands, and the user program stored in the SRAM are transferred to the EEPROM. | | | | | | |
| | SRAM → | | 2 | The data stored in the EEPROM are transferred to the SRAM. | | | | | | |

TC48-1, 48-2, TC48-3, 48-4, and 48-5 are the same adjustment. To perform setting only, use TC48-3, 48-4, and 48-5.
TC50-1, TC50-2, TC-50-3, 50-4 are the same adjustment. To perform setting only, use TC50-3.
It is advisable to record the set values in the column of "Current set value" for convenience in case of memory trouble.
Make a copy this list and use together with the Service Sheet.

# MEMO

## CAUTION FOR BATTERY REPLACEMENT

(Danish) ADVARSEL !
Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandoren.

(English) Caution !
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's instructions.

(Finnish) VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden
mukaisesti.

(French) ATTENTION
Il y a danger d'explosion s' il y a remplacement incorrect
de la batterie. Remplacer uniquement avec une batterie du
même type ou d'un type recommandé par le constructeur.
Mettre au rébut les batteries usagées conformément aux
instructions du fabricant.

(Swedish) VARNING
Explosionsfare vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

SHARP

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